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REPORT TO THE ADMINISTRATOR

U.S. ENVIRONMENTAL PROTECTION AGENCY

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TABLE OF CONTENTS

PAGE

EXECUTIVE SUMMARY. VIII

CHAPTER 1: INTRODUCTION 1-1

  THE EVOLUTION OF THE CONSTRUCTION GRANTS PROGRAM 1-1

    MANAGING THE TRANSITION. 1-2

    EPA'S FUTURE FUNDING STUDY 1-2

CHAPTER 2: AREAS OF CONSENSUS ON FUTURE FUNDING INITIATIVES. 2-1

  GRADUAL TRANSITION TO STATE/LOCAL SELF-SUFFICIENCY . . . 2-1

  CERTAINTY AND FLEXIBILITY IN FUNDING 2-2

  FUTURE NEEDS MUST BE ADDRESSED 2-3

  CONTINUED DELEGATION TO STATES 2-5

  CONTINUITY IN STANDARDS AND COMPLIANCE DEADLINES 2-6

  LINKAGE BETWEEN FUNDING STRATEGY AND STRONG ENFORCEMENT 2-6

  EQUITABLE DISTRIBUTION OF FUNDS AND AFFORDABLE PROJECTS 2-7

  MAXIMIZE LEVERAGING OF AVAILABLE FUNDS 2-7

CHAPTER 3: BACKGROUND 3-1

  FUNDING TRENDS IN WASTEWATER FACILITIES CONSTRUCTION . . 3-1

    STATE AND LOCAL GOVERNMENTS PROVIDED MOST OF THE FUNDS IN THE EARLY YEARS 3-1

    STATE AND LOCAL FUNDING DECLINED AS FEDERAL FUNDING INCREASED. 3-1

  WHAT HAS BEEN ACCOMPLISHED?. 3-3

    THE CONSTRUCTION GRANTS PROGRAM HAS HELPED IMPROVE WATER QUALITY. 3-3

    MANY WASTEWATER TREATMENT NEEDS HAVE ALREADY BEEN MET 3-4

TABLE OF CONTENTS (CONTINUED)

PAGE

Distribution of Grant Money has Varied by Community Size. 3-6

Meeting Remaining Backlog Needs Is a Complex Undertaking. 3-7

Needs Vary Among Different Community Types. 3-7

Level of Needs Remains High 3-8

CSO Correction is a Large Part of the Needs 3-14

O&M Does Need Special Attention by Federal, State and Local Governments 3-14

CHAPTER 4: BASELINE. 4-1

Trends and Needs in Local Financing 4-1

Local Governments Face Problems in Meeting Wastewater Treatment Needs. 4-1

The Outlook for Long-Term and Short-Term Debt Mechanisms is not Good. 4-2

Revenues are Insufficient to Meet Needs 4-4

Local Governments Are Developing Alternative Financing Sources for Wastewater Treatment. 4-6

Assessment/Availability of Private Sector Financing 4-8

Privatization Techniques and Transactions Are Viable for Financing Wastewater Treatment Facilities. . 4-8

Privatization Offers Some Programmatic Efficiencies For Municipalities. 4-9

Complexity and Federal Requirements May Limit the Use of Privatization Techniques 4-10

Assessment/Availability of State Financing and Support. . . 4-12

States Have Developed Various Financing Alternatives. . 4-12

Current Federal Programs. 4-21

Farmers Home Administration Provides Limited Financial Assistance to Small Communities 4-21

TABLE OF CONTENTS (CONTINUED)

PAGE

HUD Community Development Block Grants Provide Little Support to the Construction of Wastewater Facilities. 4-23

Economic Development Administration Grant Is Planned for Phase-Out in FY 1984 4-23

Office of Community Services Offers Technical Assistance Grants 4-23

The Construction Grants Program Is the Primary Source of Funds 4-23

Current Federal Programs Can Be Used as Models for Financial Delivery of a New Program 4-24

CHAPTER 5: MAJOR FUNDING OPTIONS 5-1

Overview of Evaluation Criteria 5-1

Municipal Financing 5-3

Municipal Bonds with Credit Enhancements. 5-5

Federal Loans 5-8

Federal Grants. 5-10

Capitalization Grants for State Revolving Funds 5-12

Summary of Major Funding Options as a Component of a Transitional Program. 5-17

CHAPTER 6: OVERVIEW OF A TRANSITIONAL FEDERAL PROGRAM. 6-1

Funding Levels and Commitments. 6-3

Proposed Authorizations 6-3

Commitments Beyond FY 1989. 6-3

Allotment Formula 6-3

State Choices: Project Grants vs. Capitalization of State Revolving Funds. 6-5

TABLE OF CONTENTS (CONTINUED)

PAGE

Types and Timing of State Decisions. 6-5

Project Grants: Some Choices. 6-5

State Capitalization Grants. 6-5

Treatment of Set-Asides. 6-5

Timing and Amount of Capitalization of State Revolving Funds. 6-6

Bonus for Establishment of State Revolving Fund. . . 6-6

State Matching Contributions 6-6

State Assurances to Local Governments. 6-8

Refinancing Option Under the State Revolving Fund 6-8

Use of a State Financing Plan as an Assurance Mechanism. 6-8

State Assurances to the Federal Government: Managing for Environmental Results. 6-10

Need for Results-Oriented Program Requirements . . . 6-10

State Certification of Assurance 6-11

EPA Review for Compliance. 6-11

Conditions and Options for Operating State Revolving Funds. 6-12

General Rules. 6-12

Operating Strategies 6-12

Delivery Systems and Allowable Disbursements 6-13

Applicability of Title II Requirements and Other Federal Laws 6-15

Local Assurances to the State Revolving Fund 6-16

Audits 6-17

EPA Task Force Recommendations and Plans for Implementation. 6-21

TABLE OF CONTENTS (CONTINUED)

ATTACHMENTS (SPECIAL ANALYSES FOR TASK FORCE)

1. OFFICE OF COMPTROLLER'S SET-ASIDES STUDY
2. OFFICE OF POLICY, PLANNING AND EVALUATION'S WATER QUALITY IMPACT STUDY
3. PRIVATIZATION (PEAT, MARWICK, MITCHELL & CO.)

LIST OF TABLES AND FIGURES

PAGE

FIGURE 3.1 SUBSTITUTING STATE/LOCAL FUNDING WITH FEDERAL DOLLARS. 3-2

FIGURE 3.2 WASTEWATER TREATMENT EXPENDITURES 3-5

TABLE 3.1 MEETING THE NEED FOR WASTEWATER TREATMENT 3-6

TABLE 3.2 DISTRIBUTION OF GRANT DOLLARS BY COMMUNITY SIZE. 3-7

FIGURE 3.3 BACKLOG TREATMENT NEEDS SMALL COMMUNITIES DISPROPORTIONATELY LARGE IN RELATION TO POPULATION 3-9

FIGURE 3.4 BACKLOG CSO AND PIPE NEEDS GREATEST IN LARGE COMMUNITIES. 3-10

FIGURE 3.5 REHABILITATION/REPLACEMENT AND ADDITIONS TO PREVIOUSLY FUNDED PROJECTS 3-13

TABLE 4.1 LONG-TERM MUNICIPAL DEBT FINANCING. 4-3

TABLE 4.2 STATE SOURCES OF WASTEWATER TREATMENT FUNDING 4-13

TABLE 4.3 FEDERAL SOURCES OF WASTEWATER TREATMENT FUNDING 4-22

FIGURE 5.1 UNLEVERAGED STATE REVOLVING FUND. 5-13

FIGURE 5.2 LEVERAGED STATE REVOLVING FUND. 5-14

TABLE 6.1 FEDERAL FUNDING LEVELS AND THEIR USE. . . . 6-3

FIGURE 6.1 AVAILABLE FUNDS IN SRF, BEGINNING OF YEAR 1995 6-4

TABLE 6.2 GRANT EQUIVALENCE OF SRF LOAN AT CERTAIN INTEREST RATES 6-14

TABLE 6.3 STATE REVOLVING FUND ACCOUNTS 6-18

APPENDICES*

APPENDIX A: "CALL FOR PAPERS" AND RESPONSES. . . . .
APPENDIX B: MANAGEMENT ADVISORY GROUP (MAG) REPORT . . . .
APPENDIX C: MINUTES OF THE EPA TASK FORCE ON THE FUTURE FEDERAL ROLE IN MUNICIPAL WASTEWATER TREATMENT . . . .
APPENDIX D: STUDIES PREPARED BY ORGANIZATIONS OUTSIDE EPA. . . . .
APPENDIX E: INTERNAL EPA STUDIES . . . .

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EXECUTIVE SUMMARY

THE CHALLENGE: MANAGING THE TRANSITION OF THE CONSTRUCTION GRANTS PROGRAM

The Construction Grants Program is in a critical transition phase signaled by the 1981 Amendments to the Clean Water Act. The economic, political, and programmatic realities of the 1980s and 1990s are forcing a dramatic evolution in EPA's largest environmental program. The change is under way. The challenge is to manage it wisely and effectively.

Before 1972, States and localities undertook most of the financial responsibility for wastewater treatment. This was the trend of the times, and the designers of the Federal Water Pollution Control Act Amendments of 1972 intended that it continue. The Federal dollars infused via the new Construction Grants Program were meant to help localities meet Federal water quality standards quickly. States and localities were then to resume control. But the need for the construction of wastewater facilities was underestimated. As the program evolved, its focus changed. Billions in Federal construction grants were spent to meet urgent national needs for wastewater collection and treatment. The role of the Federal government expanded rapidly, while State and local funding of publicly owned treatment works dropped to the minimum level required.

Today, the program is changing again. More and more responsibility for management and funding is being returned to the States. Over the next 5 to 15 years, managers will be increasingly concerned with operation, maintenance, rehabilitation and expansion of existing facilities, rather than mainly with meeting "core treatment needs." What is the best way to deliver limited Federal funds in the upcoming years so that facilities will be completed, water quality will be protected, and States and localities will receive incentives for becoming self-sufficient over the long-term?

This is the basic question that was addressed by a wide variety of participants in this study. Their consensus is presented here.

CONSENSUS FROM A DIVERSE ARRAY OF EXPERTS WAS SOUGHT IN THE COURSE OF THIS STUDY

This year-long effort was coordinated through EPA's Task Force on the Future Federal Role in Municipal Wastewater Treatment, as well as the Agency's Management Advisory Group. The members of both entities were from diverse backgrounds and sought opinion from a wide variety of other interested parties. Most of EPA's Assistant Administrators had input, as did Regional officials, State and local representatives, other Federal agencies, environmental groups, wastewater engineers and manufacturers, and financial and management experts. In addition, the Agency issued a "Call for Papers" in the Federal Register to solicit input from the public and private sectors and received about 30 detailed responses.

Because the participants represented a highly diverse array of disciplines and positions, there were--as was to be expected--some differing opinions on aspects of the basic issues and strategies analyzed. What was astonishing, however, was the degree of consensus between them in certain key areas.

EIGHT AREAS OF CONSENSUS EMERGED DURING THE STUDY

Several areas of consensus crystalized as the study progressed. They were used to evaluate various strategies for future program design and management, as well as the funding initiatives proposed. Briefly, participants agreed that:

1. A gradual transition from Federal responsibility to State and local self-sufficiency should be pursued.
2. While Federal aid continues, its level should be certain and States should be able to deploy funds flexibly.
3. Continuing and future wastewater treatment needs must be made an element of any new funding scenario.
4. Delegation of Construction Grants Program responsibilities to the States has been successful and should continue.
5. Major changes in standards and compliance deadlines efforts are counterproductive.
6. Federal funding strategies must promote compliance and be supplemented by strong enforcement actions.
7. Funds should be distributed equitably to meet core treatment needs first, and States should be given the flexibility to address project affordability issues.
8. The funding mechanism chosen must provide for both short- and long-term financial "leveraging" of available funds. That is, the earning power of each funding dollar must be maximized.

THE CONSTRUCTION GRANTS PROGRAM HAS ACCOMPLISHED MUCH, BUT NEEDS ARE STILL GREAT

Since the 1960s, over $113 billion from all sources has been spent on the construction of wastewater facilities. Since 1972, these expenditures have met many wastewater treatment needs nationwide, at the same time achieving EPA's goal: improved water quality. Water quality in many streams has been maintained or improved. By 1982 there were over 15,000 wastewater treatment plants in operation. The number of persons receiving secondary or greater treatment increased 67% from 1972 to 1982, while the population increased only 11%.

However, there is still a long way to go. Future needs are staggering. EPA's 1982 Needs Survey identifies an estimated total backlog need of $92.6 billion. By the year 2000, the need is expected to grow to $118.35 billion. The focus of remaining concerns is core treatment needs (eligible for funds under the 1981 Amendments to meet standards), continuing operation and maintenance, and future expansion, rehabilitation and reconstruction of facilities to maintain compliance. With respect to operation and maintenance, $110 billion has been spent by local communities since the 1960s, with costs expected to grow at a rate equal to year 2000 needs as backlog needs are met. Study participants concurred that State and local entities would assume greater responsibility for wastewater financing over the long term if the right mechanisms and incentives for self-sufficiency established. An analysis of available funds and fund-raising strategies was undertaken to aid in designing the most effective future for the national wastewater treatment program. A summary of that study follows.

STATE AND LOCAL WASTEWATER FINANCING ENTITIES NEED STRUCTURE AND HELP FROM THE FEDERAL GOVERNMENT TO BECOME SELF-SUFFICIENT

State and local governmental entities have done much, in both the traditional and innovative financial arenas, to explore funding initiatives for wastewater construction. However, as the following summary indicates, they need interim assistance from the Federal government to achieve long-term self-sufficiency and compliance.

Local Financing

The financial capabilities of local governments have been sorely tested over the last decade, and the outlook is not much better. High interest rates, large increases in municipal operating deficits, burgeoning competition for infrastructure financing, and the trend towards voter tax revolt have all had negative impacts on the ability of local governments to finance wastewater treatment needs. The response by local governments in general has been to look for increased State and Federal assistance at the same time that new borrowing and revenue alternatives are explored. The sheer magnitude of wastewater treatment needs, and the fact that they are in competition for funding with all of the other infrastructure and operating needs, means that the best efforts of local governments may be inadequate in the foreseeable future to achieve financial self-sufficiency and long-term compliance goals. Also disproportionate burdens are being placed on different sized communities. Thus, any future Federal or State assistance programs will have to address the issues of long-term municipal financial capability and the targeting of assistance to those most in need if Clean Water Act goals are to be met and maintained.

"Privatization" Shows Promise

"Privatization" of municipal services is a cooperative arrangement between cities and the private sector, whereby cities are provided with access to tax-advantaged private financing of capital improvements and contract operation of such facilities. As a result, a city may benefit from lower capital costs and a long-term contract for the provision of a needed municipal service.

Successful privatization of wastewater treatment facilities may be an effective funding alternative for some municipalities to meet their permit effluent limitations in a timely fashion. While privatization is complex and hardly a panacea, in conjunction with other funding program options it may provide a practical solution to meeting some municipal needs, improving O&M and keeping costs affordable, and could become an important factor in financing wastewater treatment facilities for population and industrial growth. Each privatization project must be carefully reviewed to be sure that no legal obstacles will block the initiative and to determine that it can be profitably owned and effectively operated. Technical assistance to localities will be needed.

State Financing: Innovation is on the Rise

The States are finding themselves in the midst of the transition in Federal-State-local roles in wastewater treatment funding, and are discovering that their responsibilities have not only been increased but also have become very diversified. They are reevaluating their current local assistance programs and State financial commitments.

Many States are exploring ways to expand the use of loans, loan guarantees, bond banking, and bond marketing to ease and complete the transition from the traditional State grant programs that drain their resources. States are also examining methods of increasing revenues through the use of special taxes and loan default penalties. The issue of equity in funding remains important, especially since smaller communities are now showing themselves to be in particular need of subsidy. In addition, some States have experienced considerable difficulties in passing new programs through their legislatures.

Federal Financing

There are five major Federal programs that fund wastewater projects in addition to EPA's Construction Grants Program: one under HUD, one under HHS, one under the Economic Development Administration (EDA), and two under the Farmers Home Administration (FmHA). The EDA program is being phased out this year, and FmHA funds have been reduced. Although Federal assistance programs were never intended to substitute for State and local financial programs, the magnitude and distribution of Federal funding for municipal wastewater treatment facilities is not going to meet all current or future needs. State and local governments will be increasingly called upon to fill this void.

FIVE MAJOR FUNDING OPTIONS WERE EVALUATED

After examining the areas of consensus, information on accomplishments and future needs, and a baseline on financial capabilities and programs, EPA evaluated five major funding options. Each option was assessed as to how well it conformed to the areas of consensus and met four criteria: effectiveness, efficiency, equity, and feasibility. The presence of undesirable features that could cause tax losses or contingent liabilities to the U.S. Treasury were also assessed.

The pros and cons of each option were analyzed, as was its usefulness as a component of the transitional program. The five options were:

- Municipal Financing - The traditional method used by State and local governments to obtain funds has been the issuance of long-term bonds. Privatization may offer an additional mechanism.

- Municipal Bonds with Credit Enhancements - The Federal government could either guarantee the repayment of a bond, or pay local governments an amount that reduces the effective interest rates on local borrowing to a lower rate, such as 5%.

- Federal Loans - The Federal government could make direct loans to local governments at low interest rates.

- Federal Grants - Under the current program, the Federal government provides annual grants for wastewater treatment from annual appropriations. Funds are allotted to States based on a complex formula that takes into account State population and wastewater treatment needs.

- Capitalization Grants for State Revolving Funds - Under a concept similar to special revenue sharing and New Federalism, the Federal government offers "seed" grants to States with which to capitalize State Revolving Funds. States loan monies to local governments for wastewater treatment construction projects. Loan repayments are re-lent ("revolved") to other local governments for additional wastewater treatment projects.

The analysis clearly showed disadvantages to most of the options. The following conclusions were drawn:

- While municipal bonds are an important element in achieving State and local self-sufficiency, many communities require supplementary assistance to meet statutory deadlines and enforceable requirements.

- Federal guarantees on bond repayments and Federal interest subsidies would encourage local governments to continue to rely on the Federal government for financial support and could result in significant tax losses or contingent liabilities to the U.S. Treasury.

- Direct Federal loans would not create a long-term capital source for meeting future wastewater facility needs, and could result in larger debt service costs to local governments than under the current grants program.

- The construction grants program is in place, effectively delegated, and operating well. In terms of leveraging funds and the potential for targeting funds, 55% Federal grants provide an excellent framework for proceeding with the construction of many needed facilities. However, in the past the program may have provided a disincentive to increased State and local funding, some delays, and some inflexibilities. Moreover, grant money, once expended, is gone, and no long-term State/local capitalization occurs. This program should now be combined with mechanisms that provide for enhanced State incentives and flexibility to promote long-term self-sufficiency and compliance.

- Capitalization Grants for State Revolving Funds is an effective and feasible approach to the transition to State and local self-sufficiency. It provides States with a growing, long-term source of funds that may be flexibly targeted to wastewater treatment now and in the future.

  The State Revolving Fund concept would involve a dedicated fund for municipal wastewater treatment, with repayments returning to the fund for use in financing new municipal wastewater treatment projects. Capitalization of the fund would initially be provided with Federal funds through State Capitalization Grants, but would increasingly rely on local contributions in the form of loan repayments.

CONSENSUS OPINION SUGGESTS A MIX OF THE CURRENT PROJECT GRANT PROGRAM AND STATE REVOLVING FUND

Beginning in FY 1986, States could shift to the State Revolving Fund (SRF) concept. That is, States could choose whether to accept capitalization grants for operating SRFs, to continue with the Federal project grant program, or combine the two. States should be encouraged to move toward full implementation of the SRF concept as soon as possible, and be provided with the incentives and flexibility to do so, because this mechanism best provides the financial means to meet short- and long-term compliance needs.

In the short term, State governments could leverage additional monies for the revolving fund through traditional long-term bond issues by using the Federal seed monies as security for the bond issues. In addition, municipalities could be encouraged to move quickly on their own, given the potential for refinancing from the SRF in the future. In the long term, an established SRF program could create a lasting source of monies for States and communities to use in meeting total wastewater treatment requirements. Thus, SRFs would provide for a phased transition to ultimate State/local self-sufficiency.

To implement this transition, the Federal government could commit to continuing $2.4 billion annually through FY 1991. Beginning in FY 1992, the amount could be reduced to $1.8 billion, with final authorization of $1.2 billion and $0.6 billion for FY 1993 and FY 1994, respectively. This transitional funding program would provide a total of $27.6 billion of Federal funds for FY 1982 through FY 1994. While many participants in the study believed that these monies might be insufficient, the buying out of the most pressing treatment needs is dependent on the pace and scope of State movement into SRFs and the targeting of funds.

The States would have increased flexibility and discretion in the use of Federal funds, but would make assurances that compliance needs would be addressed and that maximum environmental results would be obtained. To implement the SRF concept, States may need legislative changes and additional financial expertise. Under the SRF concept, Federal government involvement would be limited to ensuring that the program was managed to achieve environmental results.

Local governments would be provided with increased certainty regarding the availability of outside funding, and would be responsible for using such knowledge to develop plans for expediting compliance with NPDES requirements. Local governments receiving SRF financial assistance would also be responsible for meeting their pledges to repay SRF loans.

CHAPTER 1: INTRODUCTION

THE EVOLUTION OF THE CONSTRUCTION GRANTS PROGRAM

Representing one of the nation's largest Federal infrastructure development programs, for the past decade EPA's grant program for wastewater treatment plant construction has been the centerpiece of municipal efforts to meet the nation's ambitious water quality goals. In 1972, the designers of the Federal Water Pollution Control Act Amendments (P.L. 92-500) believed that to meet the stringent secondary treatment standards newly mandated by the Act, communities needed a substantial boost over the past in Federal aid. Over the next 12 years, Congress appropriated over $40 billion to assist municipalities in constructing wastewater treatment plants in a timely fashion. This large input of Federal dollars, and cooperation of State and local governments, is producing significant water quality improvements across the country.

By providing large amounts of Federal aid and an expanded Federal share (75 percent of eligible project costs), the 1972 Act spelled out a strong initial Federal role under the new municipal wastewater treatment plant construction program. However, its sponsors viewed the Federal intervention as a temporary fix. Ultimately, they underscored, construction of needed facilities was and should be a State and local responsibility. Moreover, the Act noted that significant contributions to plant construction had been made with State and local resources prior to 1972. It expressed the hope that the same level of commitment would be made under the expanded program, and that localities could continue to provide for the full costs of adequate operations and maintenance. Highlighting the short-term nature of the Federal involvement and perhaps the sponsors' optimistic estimate of the magnitude of the problem, the 1972 Act authorized $18 billion of contract authority for FY 1973-1975 for meeting an estimated "backlog" of $24 billion (at a 75% Federal share).

The 1970s saw much progress and some frustrations for the municipal wastewater treatment program. While the Federal government did not face the huge budget deficits of today and continued to fund the program at a high rate ($4.5. billion in FY 1978), municipal compliance goals were often not met. Projects were sometimes delayed as grant procedures burgeoned and communities waited in line for funds, and EPA's Needs Survey continued to report large municipal demands. In an effort to devise workable alternatives, the 1977 Amendments clarified Congressional policy that States have the major responsibility to manage and implement the program. On the theory that States are more appropriate managers of the program because they are close to the problems, the Amendments provided for the creation of State program delegation and greater administrative flexibility.

By 1980, however, more far-reaching reforms in the program began to be discussed. These reforms, aimed at putting the municipal wastewater treatment construction program back on course, led to the 1981 Amendments to the Clean Water Act (P.L. 97-117). These major amendments signaled the sense of Congress and the Administration that EPA's Construction Grant Program was in a period of major transition back to the original intent of P.L. 92-500--ultimate State and local self-sufficiency in the construction, operation and maintenance, rehabilitation and replacement, and expansion of municipal wastewater treatment facilities.

The transition envisioned by the 1981 Amendments was a gradual movement from the prevailing high level of Federal financial involvement to a program focused on increased State and local independence in fulfilling the full range of obligations entailed by the Clean Water Act. The long-range implications of these Amendments were significant. Funding eligibilities were limited so as to reduce the growing level of Federal financial commitment. Specifically, there was a discontinuation of Federal grants for planning and design activities (except under certain conditions), and a reduction in the number of eligible funding categories. By focusing the grants program on existing rather than future needs, Congress limited the Federal role to completing construction of facilities needed to treat wastewater discharges as prescribed by the standards. Moreover, the 1981 Amendments specified that the Federal share of eligible projects, with some limited exceptions, would drop to 55% from 75% beginning in FY 1985. Finally, Congressional appropriations were dropped from their earlier highs to $2.4 billion per year from FY 1982-1985.

Managing the Transition

The major issue today is how this continued transition can be wisely and efficiently managed to ensure the expeditious completion of needed facilities and to provide for State and local incentives to achieve long-term compliance on a self-sufficient basis. This challenge is great at a time when Federal funds are limited and Federal budgetary deficit pressures are looming. This challenge is even greater for States and municipalities as they move towards the stringent 1988 compliance deadlines, and face a backlog of other infrastructure demands, such as roads, bridges and housing. While States and local citizens may accept the philosophical notion that wastewater treatment needs must be woven into their own budgets and household expenses on an ongoing basis (much like schools and hospitals), it is a far different matter to deal with the possibility of any ultimate (however gradual) Federal financial phase-out.

To address the future programmatic transition and prepare for reauthorization of Title II of the Clean Water Act necessary for FY 1986, in January, 1984, EPA initiated a year-long study on future Federal, State and local funding roles and alternative funding mechanisms for municipal wastewater treatment. EPA believed it was critical to determine how the pace of construction might be increased and incentives enhanced to "buy out" core treatment needs, while at the same time making preparations for the next generation of activities, namely, adequate long-term O&M, rehabilitation/ replacement and needed expansion of municipal wastewater treatment facilities.

EPA's Future Funding Study

To make these evaluations and lay the groundwork for the continuing transition, EPA's study focused on two major goals:

- Build a national consensus on the shape of alternatives for future Federal financing of municpal wastewater treatment.

- Develop a set of policy and legislative recommendations regarding alternative program strategies that will best promote both the intent of the Clean Water Act--long-term State and local self-sufficiency, and the goal of the Act--long-term municipal compliance.

The building of a national consensus on a future funding strategy for meeting municipal wastewater treatment needs was conceived as a broad "building-block" process. The purpose of EPA's year-long funding study was not to impose solutions worked out internally at Headquarters, but to bring to the surface and evaluate the real concerns and issues of all parties involved. To accomplish this goal, a comprehensive approach was followed in which as many and varied views as possible were collected, and a broad range of participants were involved in decision making. This report reflects this ongoing work.

A multi-disciplinary EPA Task Force on the Future Federal Role in Municipal Wastewater Treatment was organized to oversee the study. Headed by Assistant Administrator for Water, Jack E. Ravan, and staffed by the Office of Water and the Office of Municipal Pollution Control, the Task Force represented a broad range of skills. Represented were the EPA Assistant Administrators for Administration and Resources Management, for Policy, Planning and Evaluation, for External Affairs, for Enforcement and Compliance Monitoring, for Solid Waste and Emergency Response, and EPA's General Counsel. Members were also drawn from three EPA Regions; the Region IV Administrator, the Region VI Deputy Administrator, and the Region V Water Division Director. The President of the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) served as an ex-officio member. The EPA Task Force met regularly throughout the year. Minutes of these meetings are included in Appendix C.

EPA announced its initiation of the study and issued a "Call for Papers" on its study plan in the Federal Register on February 16, 1984. In this notice, EPA solicited input from the public and private sectors on the range of funding options and evaluative criteria recommended for consideration. In addition, EPA outlined a number of parameters or "boundaries" of its study, including the provisions under the 1981 Amendments for a 55% Federal share and limited funding eligibilities (Categories I, II, IIIA and IVB), and adherence to current U.S. Tax Code provisions. Responses came in from all sectors--State and local governments, professional engineering firms and associations, environmental and financial groups, and private citizens. The Federal Register's "Call for Papers" and the approximately thirty, sometimes highly detailed, responses are included in Appendix A.

EPA's Task Force also sought direct expression of opinions and views from outside participants. EPA's Management Advisory Group to the Construction Grants Program (MAG)--which had been asked by Administrator William Ruckelshaus in October, 1983 to study future funding mechanisms--began working in earnest. An official advisory group to the Office of Water's Construction Grant Program for the past 11 years, the 16-member MAG combines a diversity of professional backgrounds including wastewater treatment engineering and management experts, equipment manufacturers, financial specialists, local government officials, and environment and public representatives from throughout the county. It was important, as the Administrator stated, to "tap the collective wisdom of MAG" and obtain the group's best advice on the county's financing of wastewater treatment.

The MAG and a special 11-member subgroup met regularly over the next months to hammer out its findings. In the course of its eight months of deliberations, MAG heard from a variety of major public and private sector organizations representing diverse interests, including the Water Pollution Control Federation (WPCF), Association of Metropolitan Sewerage Agencies (AMSA), American Consulting Engineers Council (ACEC), National Society of Professional Engineers (NSPE), Water and Wastewater Equipment Manufacturers Association (WWEMA), National Governors Association (NGA), National Wildlife Federation (NWF), Maryland League of Women Voters (MLWA), Izaak Walton League (IWL), National League of Cities (NLC), and Association of State and Interstate Water Pollution Control Administrators (ASIWPCA). MAG also had the benefit of discussions with persons experienced in public financing and Federal tax regulations, and drew upon past MAG and EPA studies. EPA staff assisted in answering discrete technical and financial questions posed by MAG.

On May 10, 1984, MAG presented its final recommendations to EPA's Task Force. The MAG report, titled "Future Funding of Municipal Water Pollution Control Needs," represents a consensus of its members and is presented in Appendix B. The Task Force gratefully acknowledges the expert, thoughtful and hard work of the MAG members in drafting their guidance to EPA.

EPA's Task Force also heard directly from other Federal and State government agencies involved in wastewater treatment programs. These included the Department of Agriculture's Farmers Home Administration (FmHA), the Treasury Department's Federal Financing Board (FFB), the Office of Management and Budget (OMB), and the State of New Jersey. On May 31, 1984, EPA held a public hearing on future funding problems and directions, attended by twenty interest group, governmental, and private sector representatives. As a final input, ASIWPCA offered to prepare case studies on new State programs for financing wastewater treatment. In July 1984, ASIWPCA submitted its survey to EPA, which included special case histories of new funding programs developed in 10 States--California, Georgia, Minnesota, Maryland, Mississippi, Missouri, New Hampshire, Pennsylvania, and Tennessee. EPA thanks the ASIWPCA staff and the States for their invaluable contribution.

In short, this report is a product of many hands. In addition to the above-mentioned contributions, special studies, appearing in Appendix E, were prepared by EPA's Office of Policy, Planning and Evaluation (on water quality benefits), Office of the Comptroller (on options for set-aside programs), and Peat, Marwick, Mitchell & Co. (on privatization). Summaries of these studies also are included as an attachment to this report. Other materials in direct support of the study were prepared by the Office of Municipal Pollution Control, with important contractural support from The Synectics Group, Inc. (TSG), and the Government Finance Officers Association. The consensus, background/baseline for the study, and the major options and evaluative criteria presented in the following pages lay the groundwork for an important programmatic transition.

CHAPTER 2: AREAS OF CONSENSUS ON FUTURE FUNDING INITIATIVES

A national consensus-building goal was adopted because of the complexity and sensitivity of the funding and resource issues involved. This section explores the balance of opinion which began to emerge as the study progressed. This consensus crystalized gradually as discussions continued with governmental representatives, engineering and financial experts, and environmental groups throughout the country. Of course some major differences among groups and individuals remain. What was gratifying, however, was the remarkable degree of general consensus which did surface in broad areas. Without any this general agreement, it would have been difficult to proceed. The eight areas of consensus presented below thus serve as the underpinnings for the detailed evaluation of major Federal, State and local funding options and financial delivery systems presented in the final chapters of this report.

Gradual Transition to State/Local Self-Sufficiency

As signaled most clearly by the 1981 Amendments, there was a general agreement that the municipal wastewater treatment plant construction program was moving slowly from a period of high Federal financial support in the 1970s to greater State and local independence in the 1990s. Several issues are involved in such a shift: how quickly it should occur, the level of Federal funding during the transition, and the Federal role in targeting funds to core and other needs.

Even now, Federal funds are much more limited than in the past. Groups such as the Environmental Protection Agency's Management Advisory Group (MAG) and the Water Pollution Control Federation (WPCF) referred to this transition as an "ultimate Federal funding phase-out." MAG thereby recommended a 10 year period for withdrawal, and WPCF an even shorter period. Other groups avoided the term "Federal phase-out," but discussed programs leading toward this. Such programs would seek ways to increase the pace of construction, and leverage monies in anticipation of limited future Federal funds.

The issue of "how much" Federal input was needed, however, raised a sharp difference in views. For example, the MAG report recommended an annual Federal infusion of $3.5 billion for ten years, while H.R. 3282 passed the House with higher recommended levels. Many States and other groups, including the Association of Metropolitan Sewerage Agencies and the National Governors Association, agreed that an increase in Federal financial support was necessary. However, a wide variety of groups, such as ASIWPCA, recognized that it might be necessary to work within EPA's currently authorized and projected level of $2.4 billion a year. A few others, such as the Water Pollution Control Federation, favored a reduced Federal level after several years. This was based on their concern that the bureaucratic red tape still entailed by EPA's grant process delayed construction, and thus communities might gain from funding projects themselves. These various opinions are summarized in the MAG Report, which is included in Appendix B.

Another area of emerging consensus concerned a highly focused or targeted Federal role needed to "buy out" core treatment needs as promptly as possible.

Given limited and perhaps slowly diminishing Federal funds and tough compliance deadlines, many participants agreed that these funds could be best utilized to finance a share of the treatment-related needs as outlined in the 1981 Amendments and EPA's 1982 Needs Survey. Under the 1981 Amendments, the eligible categories for Federal grants effective October 1, 1984, are generally limited to secondary treatment (Category I), advanced treatment (Category II), infiltration/inflow correction (Category IIIA), and new interceptor sewers (Category IVB). According to EPA's 1982 Needs Survey, these account for $35.4 billion of total 1982 municipal needs, and it is these needs which municipalities must meet under the 1988 compliance deadlines set by the Clean Water Act and reinforced by EPA's 1984 National Municipal Policy. In addition, those combined sewer overflow (CSO) projects authorized under Section 201(n) are also eligible for Federal funding.

As discussed below, to continue to focus Federal funds on these core treatment-related needs does not mean that funding strategies can neglect the vast range of other important collection and CSO correction needs. According to EPA's 1982 Needs Survey, these categories account for an additional $57.2 billion to serve 1982 needs. These needs are extremely pressing and growing in many communities. However, a "first things first" strategy prevailed and, as MAG noted, "time is a critical factor." Further impetus to the notion of clearly targeted Federal funds, as outlined in the 1981 Amendments, arises from a concern to complete core treatment needs before "second-round" grant pressures arise.

A final area of strong consensus related to a gradual or phased transition from high Federal participation to increased State and local support of wastewater treatment. As participants argued, increases in State and local costs should be accomplished gradually and incrementally in order to minimize resistance to making the changes needed for locally self-sufficient wastewater treatment. Also, a smooth transition will require a clear understanding of the new roles and responsibilities by all participants. It must be clear that EPA is not simply transferring program functions to State and local authorities, but will be intensively involved in the transition, and will play important on-going oversight and assistance roles after the transition has been completed. EPA also recognizes that States are at different levels in their capacity to accept increasing technical and financial responsibilities for the program. The Agency will provide assistance where it is most needed for the States to move successfully through the transition.

Certainty and Flexibility in Funding

In moving towards ultimate State and local self-sufficiency, a clear consensus centered on the critical need to provide a stable and certain level of Federal aid. This is seen as important if States are to initiate or revise programs that will effectively meet municipalities' continuing and future wastewater treatment needs. In addition, any funding alternative should be designed to provide individual communities with a reasonable degree of certainty as to whether or when Federal and/or State funding will be available to them. This is necessary since the National Municipal Policy requires municipalities to submit municipal compliance plans--based on the financing of construction--with or without Federal assistance.

The call for certainty in Federal funding is hardly new. Uncertainty seems to have plagued the program, although stable annual appropriation levels over the past four years at the levels authorized by the 1981 Amendments has reduced this problem somewhat. But uncertainty still exists concerning the future of the grants program. Moreover, while participants may disagree on the amount of needed Federal funds, they clearly agree on the importance of not subjecting the Federal program to budgetary or politically motivated upheavals every three to four years.

A more recent element of this consensus opinion is aimed at reducing the tendency of some localities to "wait in line" for a Federal grant. Study participants predicted that if greater certainty about future Federal funding was provided, communities might acquire a more realistic expectation about the likelihood of receiving funding. Moreover, any new program should be structured so that communities are encouraged to proceed with construction as quickly as possible, instead of waiting for a Federal grant, and to encourage the most effective operation and maintenance of existing facilities to delay or reduce needs for additional construction.

Flexibility for State governments is a key ingredient of this consensus. While the current downward trend in Federal funding levels is resisted by some, it appears that States and communities would support this trend if provided with long-range certainty about the future levels of Federal funds and a greater role in decision making.

New proposals for enhanced flexibility include discretionary authority for States to devise innovative funding mechanisms and strategies to best meet their particular needs. Some of these new funding mechanisms include the State revolving loan and interest subsidy programs recommended by MAG, and the revolving loan, bond guarantee, bond insurance, and interest subsidy programs proposed under in H.R. 3282. States also strongly support the notion of increased flexibility in designing mechanisms that address local affordability issues. Since the financial condition of communities varies widely and financially hard-pressed smaller communities may pose special problems, States seek greater flexibility in funding specific construction projects. Such affordability issues are discussed below.

Future Needs Must Be Addressed

Another area of strong consensus is that any future funding strategy must address the full range of water pollution control needs facing communities, including needs not eligible for Federal funding under the 1981 Amendments. The importance of considering the total financial burden on communities is stressed in EPA's February 16, 1984 Federal Register notice, "Call for Papers," and serves as the underpinning of Chapter 3 of this report. As MAG reported: "Since a large portion of [total] needs cannot be Federally funded, some criteria of affordability and implementability will be needed to compare different ways of reducing the municipal burden to a feasible level."

Not only must the totality of needs be considered, but future changes in the character of needs must be addressed. In a very real sense, we are in a period of transition from a wastewater treatment program aimed at building core treatment facilities to a program dedicated to assuring effective State/local operation and maintenance programs and local funding, and accommodation of future needs for rehabilitation, reconstruction, replacement and expansion. This transition will occur naturally over time and will accelerate in the 1990's as core needs are bought out.

To conceptualize this transitional shift in emphasis and assist in the targeting of funds, EPA divided community "needs" into three categories.

- Concern 1: Core treatment needs are generally those that remain eligible for Federal funds under the 1981 Amendments effective October 1984. These needs should be targeted first under any new funding strategy. These include:
    - Treatment plant needs for existing populations (Categories I and II - secondary and advanced treatment) excluding new facilities that,
        - replace (or add to) existing facilities that are meeting current standards
        - propose replacement of on-site systems that are not based on approved facility plans
        - propose replacement of on-site systems based on approved facility plans, but that involve growth increase of 50% or more.
    - Infiltration/inflow correction costs where the existing treatment plant is not meeting standards (Category IIIA)
    - New interceptor sewers and transmission pumping stations necessary for conveying wastewaters that are currently discharged raw or which are inadequately treated at existing facilities which may be abandoned (Category IVB).
    - Some CSO (Category V) projects, as authorized under Section 201(n) for State priority water quality improvements.
- Concern 2: Continuing operation, maintenance and replacement of equipment to meet standards. Traditionally, these have been costs that local communities have borne almost exclusively and will take on increased importance in the future. As the transition to State and local self-sufficiency for upgrading, expansion, rehabilitation and reconstruction of facilities becomes more prominent in the next 5-15 years, these costs may rise. Concern 2 needs specifically include annual operation and maintenance (O&M) costs incurred in operating facilities within performance levels required by standards, maintaining equipment to ensure proper operations and service, and replacement of minor equipment and appurtances.

- Concern 3: Future needs that ensure construction of adequate capacity and ultimate rehabilitation and reconstruction of facilities in categories not eligible under Concern 1, and reserve capacity and plant expansion to accommodate population growth. These costs, which have received some Federal support in the past, should be primarily a State and local government responsibility in the future. These costs include:

  - Reserve capacity for future growth
  - Plant expansions
  - New collector sewer projects (Category IVA)
  - Many CSO (combined sewer overflow) correction needs (Category V)
  - Rehabilitation, replacement and reconstruction of existing sewer sytems beyond those for correction of infiltration/inflow (Category IIIB)
  - Control of stormwater runoff (Category VI)

Plant reconstruction and expansion issues deserve special attention here because of concerns raised that they could lead to pressures for "second-round" grants. Consensus opinion on these issues underscored the idea that promotion of local growth and economic development is best handled by State and local governments and thus should be their responsibility. Where growth is occurring, States and local governments must be responsible for ensuring that needed facilities are constructed; reserve capacity to accommodate future growth is best addressed during preconstruction planning. All parties must recognize that reconstruction, rehabilitation, and expansion will be increasingly important aspects of the program. Consequently, strategies must be developed to enhance the ability of State and local governments to uphold their responsibilities for ensuring that existing facilities are operated and maintained to meet compliance requirements and minimize needs for additional construction, and also that existing facilities are rehabilitated, reconstructed or replaced as required to continue to meet environmental objectives.

Continued Delegation to States

This area of consensus evoked almost unanimous support, particularly from ASIWPCA. On the assumption that States are the more appropriate managers since they are closer to the program, 40 States have accepted full delegation since 1977. As further indication of independent State interest and creativity in devising innovative States programs, many States initiated new programs to launch themselves toward greater financial and administrative self-sufficiency in response to the 1981 transition. Discussed in Chapter 4, these include improved bond management, new bond guarantee and insurance programs, loan funding mechanisms, interest subsidies and the like. Thus, there was agreement that any future funding option should result in an increase in State responsibility in managing, administering and financing the option. Concurrently, States should be provided with increased flexibility in how the program is managed, administered and financed.

Continuity in Standards and Compliance Deadlines

States and other participants agreed that to maintain progress and minimize potential disruptions, major changes should not be made in the existing standards. If changes are deemed necessary, all actors must be involved in the revision process, including all levels of government and the private sector. As MAG stated, it strongly "supports the need to establish consistency in the Federal program, in terms of reliable, uniform, and long-term goals and commitments upon which municipalities can then determine without uncertainty what is expected of them." Likewise, ASIWPCA and other groups supported retention of the 1988 goals and compliance deadlines in order to provide milestones for State and local action.

Linkage Between Funding Strategy and Strong Enforcement

There was much discussion of the need to design any new funding strategy within the context of EPA's 1984 National Municipal Policy and 1988 compliance deadlines. The potential for new strong and consistent Federal and State enforcement was viewed as a key element for success in achieving compliance.

Under the National Municipal Policy, communities are required to meet applicable NPDES permit requirements by July 1, 1988, whether or not they receive Federal funding. Strong enforcement of this policy was viewed as the best means of stimulating the innovation necessary for municipalities to complete or improve the operation of needed facilities. In particular, where delays are caused by communities waiting for Federal financial assistance, it was felt that such delays should be identified and corrected through appropriate enforcement actions.

Although enforcement strategies can be used effectively to move municipalities into compliance, it was noted that funding strategies should also be designed with adequate incentives for municipalities to finance needed projects in the short-term without outside assistance. Where possible, funding strategies should create opportunities to reward, rather than penalize, those communities that proceed in advance of outsided funding. Such options are discussed more fully below under "Maximum Leveraging of Available Funds."

The attainment and continued maintenance of compliance by all municipal facilities will also require enforcement of O&M requirements in permits, and collection of adequate fees and revenues needed to meet rising O&M and replacement costs. MAG noted that current local user fees do not always reflect the true costs of providing wastewater treatment services, and that local user fees may have to be increased. The National Municipal Policy strategy for facilities that require improved O&M provides for development of a Composite Correction Plan. Through examination of the financial management system, this enforcement tool will provide a means of assuring that locally collected user fees and other revenues are maintained at adequate levels and, where appropriate, reflect the variation in demands placed on the system by each user. In addition, the establishment of an adequate user fee system could also be accomplished through conditions on outside financial assistance that is made available to municipalities.

Equitable Distribution of Funds and Affordable Projects

Equity and affordability issues attracted much attention. EPA's Task Force noted that there was considerable tension between these two goals. Indeed, equitable distribution of funds (i.e., directing limited Federal funds first to communities who had not yet received grants) did not always enhance the affordability of projects. Some financially hard-pressed communities simply needed more financial support than others and, in particular, smaller communities were sometimes affected by prohibitive "diseconomies" of scale in treatment systems and costs. There was substantial agreement, however, that both goals needed to be addressed.

In terms of equitable distribution of Federal grant awards, EPA, as well as many States and outside participants, specifically noted that second-round funding for facilities is not only inequitable but also violates the goals of long-term self-sufficiency and compliance. The communities receiving a second-round grant--and other communities that are aware of the opportunity for receiving second-round funding--will continue to look to the Federal government as a source for funding future construction. Long-term compliance efforts will be hindered if limited Federal funds are used to fund new growth for complying facilities or replacement of facilities that have already received CWA funding at the expense of funding improvements to facilities that have never met standards or received Federal assistance.

Because project affordability issues pose special problems, the consensus was that States were best equipped to address them. Rather than restructuring Federal grants to encompass criteria such as per capita costs and local financial capability on a nationwide basis, State governments should be provided greater flexibility to provide for these problems on a State-wide basis. Underscored was the notion that "unaffordable" projects delayed compliance. If a community perceived a project as beyond its means, it would simply delay the start of needed construction.

Maximize Leveraging of Available Funds

Given the limited Federal funds available, EPA, MAG, and many States agreed that funding alternatives must be established that substantially increase State financial capabilities in both the short- and long-run. A consensus emerged that funding alternatives must provide for near- and long-term leveraging of Federal dollars to increase the pace of construction, meet the 1988 compliance deadlines, and provide State and localities with sufficient funds to meet future needs.

MAG specifically recommended that "States should be permitted to use Federal funds as grants, revolving loans, and/or interest subsidies." Revolving loan funds, such as the one recently enacted in Georgia, would permit States to recapture monies to capitalize their funds over time. Thus, States would begin to accrue additional resources to finance future municipal wastewater treatment needs. H.R. 3282 (98th Congress) also provided for an additional $1.6 billion "sweetener" in Federal funds for State loan and loan guarantee programs. In the short-term, State leveraging and local refinancing options would help meet 1988 compliance goals. The State Revolving Fund concept is described in more detail in Chapter 6.

CHAPTER 3: BACKGROUND

FUNDING TRENDS IN WASTEWATER FACILITIES CONSTRUCTION

Over the years, more than $113 billion (constant 1982 dollars) has been spent on the construction of wastewater facilities. Since 1960, funding for construction of wastewater facilities from all Federal, State and local sources has increased significantly, reflecting the growing population and better understanding of the need for municipal wastewater treatment. Until the early 1970s, most of the funds came from State and local sources, with some Federal funding (see Figure 3.1).

State and Local Governments Provided Most of the Funds in the Early Years

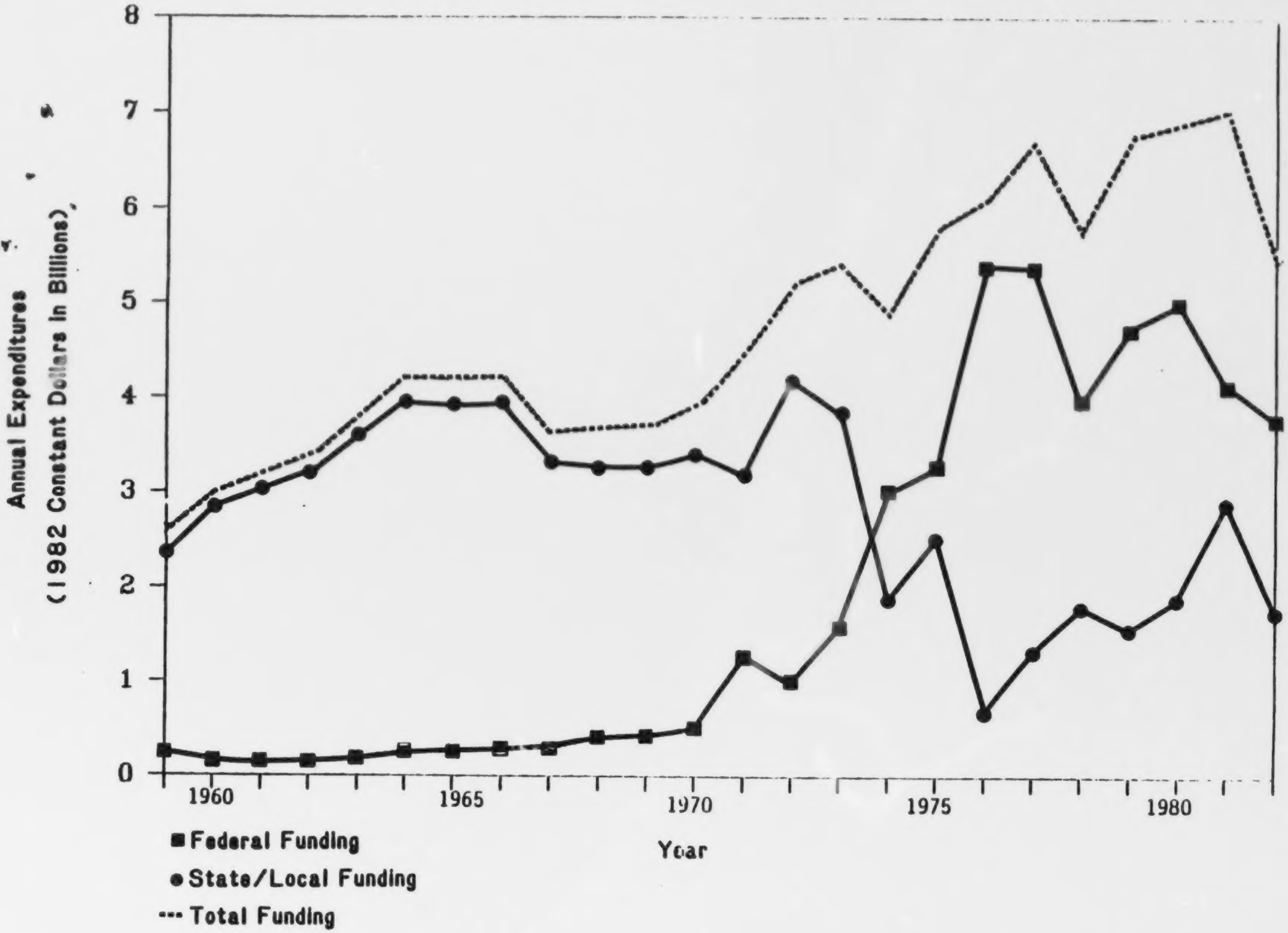
In 1972, the grant program was drastically expanded, not only in terms of the amount of Federal funding available, but also in terms of the Federal share of project costs, and eligibilities. The reasons for such a substantial expansion of Federal aid were two-fold: the standards mandated by the Federal Water Pollution Control Act needed to be backed by a Federal financial commitment and, since municipalities would be playing "catch-up" with water pollution control standards, they needed a significant inducement to meet these goals as quickly as possible. However, this intervention was viewed as a one-time, short-term solution; funding to construct needed facilities in the future ultimately rested with State and local governments.

State and Local Funding Declined As Federal Funding Increased

Although it was unrealistic to expect attainment of standards by 1977 or even 1983 through the grants program alone, the backers of the 1972 Amendments did note that States and municipalities had made significant contributions of their own resources prior to 1972, and expressed the hope that the same level of commitment would be made under the expanded program. Unfortunately, as Federal funding for municipal wastewater treatment increased during the 1970's, there was a marked substitution of Federal dollars for State and local dollars. As shown in Figure 3.1, Federal support increased in the period of 1970-1978, largely due to the growth in the Federal Construction Grants Program under the 1972 amendments. Concomitantly, State and local funding support declined. By 1976, Federal outlays peaked at $5.38 billion while State/local spending dropped to under $1 billion, a decrease of more than 75% from State and local funding levels in 1960 (constant 1982 dollars).

By 1978, the current funding patterns established by the 1972 Amendments were in place. State and local governments contributed fewer dollars as Federal funding increased, going little beyond the level required to "match" Federal dollars. Funding of projects solely from State/local sources significantly decreased. By 1982, for example, it is estimated that the dollar value of State/local support not tied to the Federal Construction Grants Program was

FIGURE 3.1 SUBSTITUTING STATE/LOCAL FUNDING WITH FEDERAL DOLLARS



less than $1 billion, down from an estimated $2.3 billion in 1970. Thus, even though the number and dollar value of projects increased as a result of the Construction Grants Program, the level of State and local spending for construction in constant dollar terms actually declined. Despite this decline, local governments have increased total spending to support operations and maintenance costs of newly constructed facilities.

These trends suggest that State and local governments could pay more for wastewater treatment as the Federal government slowly withdraws its support. Such increases, however, will require that proper mechanisms for local capital and O&M self-sufficiency be put in place.

WHAT HAS BEEN ACCOMPLISHED?

The Construction Grants Program Has Helped Improve Water Quality

The Clean Water Act placed treatment requirements on municipalities in the effort to improve the nation's water quality. In particular, they must meet secondary treatment discharge limits by 1988. The efforts of the Construction Grants Program has largely been directed to helping municipalities meet this requirement. In some areas, even more stringent treatment requirements are in place because of the need to protect or enhance water quality. EPA's guidance for the development of State Construction Grant funding priority lists has always emphasized water quality, and this emphasis has increased in recent years.

Between 1972 and 1982, the population of the United States grew 11%. At the same time, removal of certain pollutants from municipal wastewater (biochemical oxygen demand or BOD, and suspended solids) increased by 65%. Much of this increased treatment capability can be attributed to the Construction Grants Program, which has helped many municipal facilities achieve secondary treatment levels. In addition, although the flow of municipal wastewater has increased by nearly seven billion gallons per day, the total amount of pollutants discharged has not increased. States estimate that 1982 discharges of pollutants would have been 191% greater than the levels actually discharged if the treatment capabilities had not been increased as they were under the Construction Grants Program (America's Clean Water: The States' Evaluation of Progress 1972-1982).

According to that report, water quality in many streams has remained the same or improved in the past 10 years. For example, States report that 296,000 stream miles maintained the same water quality over that time; 47,000 miles have improved; 11,000 miles have poorer water quality now than 10 years ago (America's Clean Water: The States' Evaluation of Progress 1972-1982). A significant part of this improvement (or prevention of further degradation) can be attributed to improved levels of municipal treatment, which have offset the increase in pollutant loads caused by increases and shifts in population and new sewers.

An important indicator of water quality is the attainment of uses designated by States. An assessment of 758,000 stream miles showed a 79% increase in the number of stream miles supporting designated uses from 1972 to 1982 (from

272,000 miles to 488,000 miles). The number of stream miles partially supporting designated uses increased 3.5 times (from 46,000 miles to 167,000 miles). Stream miles not supporting designated uses increased from 30,000 to 35,000. It must be noted, however, that much of the change reported can be attributed to a more complete assessment in 1982 and not necessarily to an increase or decrease in pollutants. Specifically in 1972, more than 410,000 miles were in the "unknown" category. This number fell to 68,000 miles in 1982 (America's Clean Water).

Many Wastewater Treatment Needs Have Already Been Met

The accomplishments of the program can be determined in part from the 1982 Needs Survey, which collected data on existing and planned facilities. Data include the number of wastewater facilities providing various levels of treatment, costs associated with needed collection and treatment facilities, population served and needing wastewater service. Data are aggregated as well as broken down by State. As described below, considerable progress has been made in meeting the Nation's need for wastewater facilities. For example, the number of persons receiving secondary or greater treatment increased 67% from 1972 to 1982, while the population increased only 11%. Overall, the population needing but not receiving sewage collection and treatment declined by one-third in that period:

- In 1982, there were 15,425 wastewater treatment plants in operation, with a total flow of 101,794,000 cubic meters per day (domestic waste accounts for about 85% of the total). Planned facilities for secondary treatment and advanced treatment (Categories I, and II) totalled 7,075, with an expected flow of 12,581,000 cubic meters (1982 Needs Survey, Summaries of Technical Data).

- For infiltration/inflow correction, replacement and/or rehabilitation of facilities, new collector and new interceptor sewers (Categories IIIA, IIIB, IVA, and IVB), the 1982 Needs Survey showed that 71.5% of the population is now served by wastewater collection systems. The Survey estimated that 90.2% would be served in 2000.

As of July 1977, 37% of the secondary treatment plants required by the Clean Water Act had been constructed. By June 1983, the number had increased to 69% (National Water Quality Inventory: 1982 Report to Congress). Much of this increase can be attributed to increased Federal funding in the mid-1970s. Figure 3.2 shows the cumulative expenditures for wastewater treatment construction in which some Federal funds were expended ($113.6 billion), as well as the estimated value of construction grant-funded projects (Federal plus State and local matching funds) and the cumulative constant Federal dollars. All are in constant 1982 dollars.

FIGURE 3.2 CUMULATIVE WASTEWATER TREATMENT

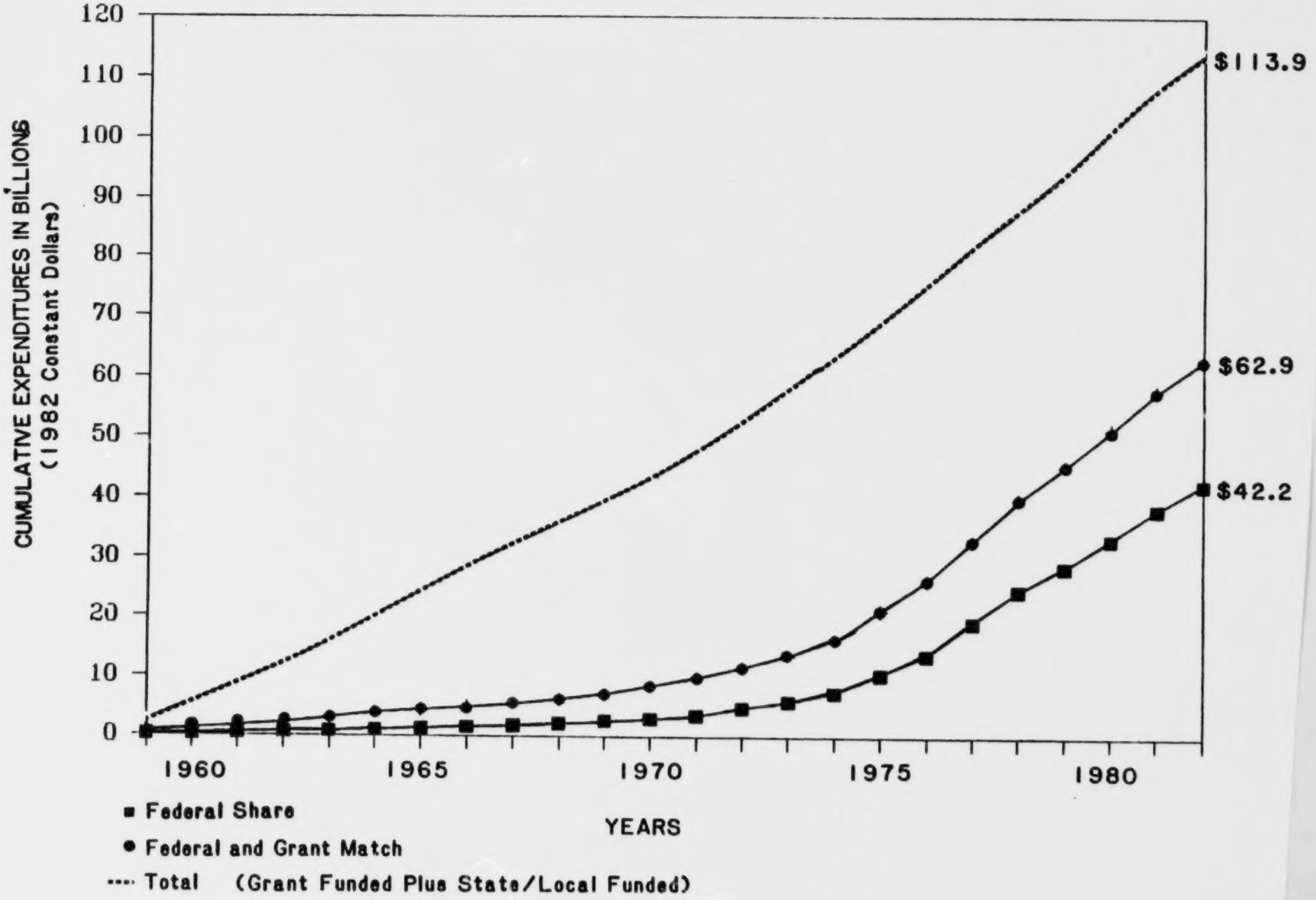


Table 3.1 summarizes changes in population served by various types of wastewater facilities between 1972 and 1982. Fifty-seven million more persons were served by secondary treatment in 1982 than in 1972. Four million fewer persons were served by sewer lines carrying raw wastewater to streams. Overall, one-third fewer persons needed but were not receiving public sewage collection and treatment.

TABLE 3.1

MEETING THE NEED FOR WASTEWATER TREATMENT

	Population Served (Millions)		
	1972	1982	% Change
Secondary (or more advanced) treatment	85	142	+67%
Sewer lines carrying raw wastewater to streams	5	1	-80%
Persons needing but not receiving public sewage collection and treatment	21	14	-33%

(Source: America's Clean Water)

Distribution of Grant Money Has Varied By Community Size

Small communities have received a large number of grants because many have needed wastewater facilities and there are many more small communities in comparison to large communities. Table 3.2 shows the number of grants and distribution of dollars by community size from 1973 to 1983. Small and very small communities have received 66% of the grants but only 23% of the funds, while very large and large communities have received only 15% of the grants but 55% of the dollars. As the following section, Remaining Needs, demonstrates, the needs in small and very small communities are much greater than their percentage of the population.

TABLE 3.2

EPA CONSTRUCTION GRANTS PROGRAM
DISTRIBUTION OF GRANT DOLLARS BY COMMUNITY SIZE
FISCAL YEAR 1973-1983 OBLIGATIONS
(in $ millions)

Community Size	Number of Communities Receiving Grants	% of Total Number	Dollars	% of Total Dollars
< 3,500	11,059	47%	3,865	11%
3,501-10,000	4,412	19%	4,280	12%
10,001-50,000	4,558	19%	8,226	23%
50,001-125,000	1,470	6%	5,359	15%
> 125,000	2,197	9%	14,297	40%
Total	23,696	100%	36,027	100%

(Source: U.S. Environmental Protection Agency, as reported in Alternative Funding Mechanisms for Wastewater Treatment, Background and Trend Analysis, Government Finance Research Center, April 23, 1984 Draft, p. II-4).

MEETING REMAINING BACKLOG NEEDS IS A COMPLEX UNDERTAKING

Needs Vary Among Different Community Types

The 1982 Needs Survey identified a total backlog need of $92.6 billion. The cost of meeting the core treatment needs (Categories I, II, IIIA, IVB) was found to be $35.4 billion. Needs for rehabilitation, replacement, future expansion, and other costs not eligible under the 1981 amendments totalled $21.46 billion, in addition to approximately $35.74 billion needed for correction of combined sewer overflows.

Needs for construction of wastewater facilities varies among communities of different sizes, in different areas of the country, and even by type of facility needed. Often these needs vary disproportionately within these groupings. The EPA's 1990 Construction Grants Strategy Study suggested that the heaviest financial burden for wastewater treatment would fall on small and older urban areas. In brief, reasons cited for small community (less than 10,000 population) financial incapability included higher per capita cost of providing wastewater services due to a lack of economies of scale, inadequate financial management skills, lower median income levels, lower or no bond ratings resulting in higher interest costs for issuing municipal debt, and greater probability of operating budget deficits. Alternatively, fiscally distressed older urban centers were singled out as a consequence of aging sewer systems in need of rehabilitation, combined sewer overflows, and urban stormwater needs exacerbated by severely-strained financial conditions. As a consequence, other methods for financing wastewater treatment are being explored or expanded; these are discussed in Chapter 4, Baseline.

Figures 3.3 and 3.4 show the backlog of treatment needs by community size. The backlog treatment needs in small communities in relation to population is disproportionately large (i.e., while very small and small communities represent 30% or $7.2 billion of the backlog treatment needs, they comprise only 14.6% of total community population--a 2 to 1 ratio--as compared to large communities which present 53.1% or $10.4 billion needs and 67.9% of the population--approximately a 1 to 1 ratio). This is indicative of higher per capita costs and the lack of "economies of scale" at work in small communities. Small (3,500-10,000 people) and very small (< 3,500 people) communities also represent a large share of total backlog collector and interceptor pipe needs (41.5% or $10.7 billion). In contrast, large (50,000-150,000) and very large (>150,000) communities comprise a very large share (73% or $26.1 billion) of backlog CSO needs. In addition, the need for correction of combined sewer overflows (CSOs) accounts for 38.2% of the total need in all five categories, and even this need is unevenly distributed (see below, Magnitude of Needs). The need for CSO correction is concentrated in marine bays and estuaries, which represent 31% of the CSO correction need but only 10% of the facilities needing correction. Thus, the varied composition of backlog needs in different sized communities requires that States be given the flexibility to target dollars to effectively buy out these needs.

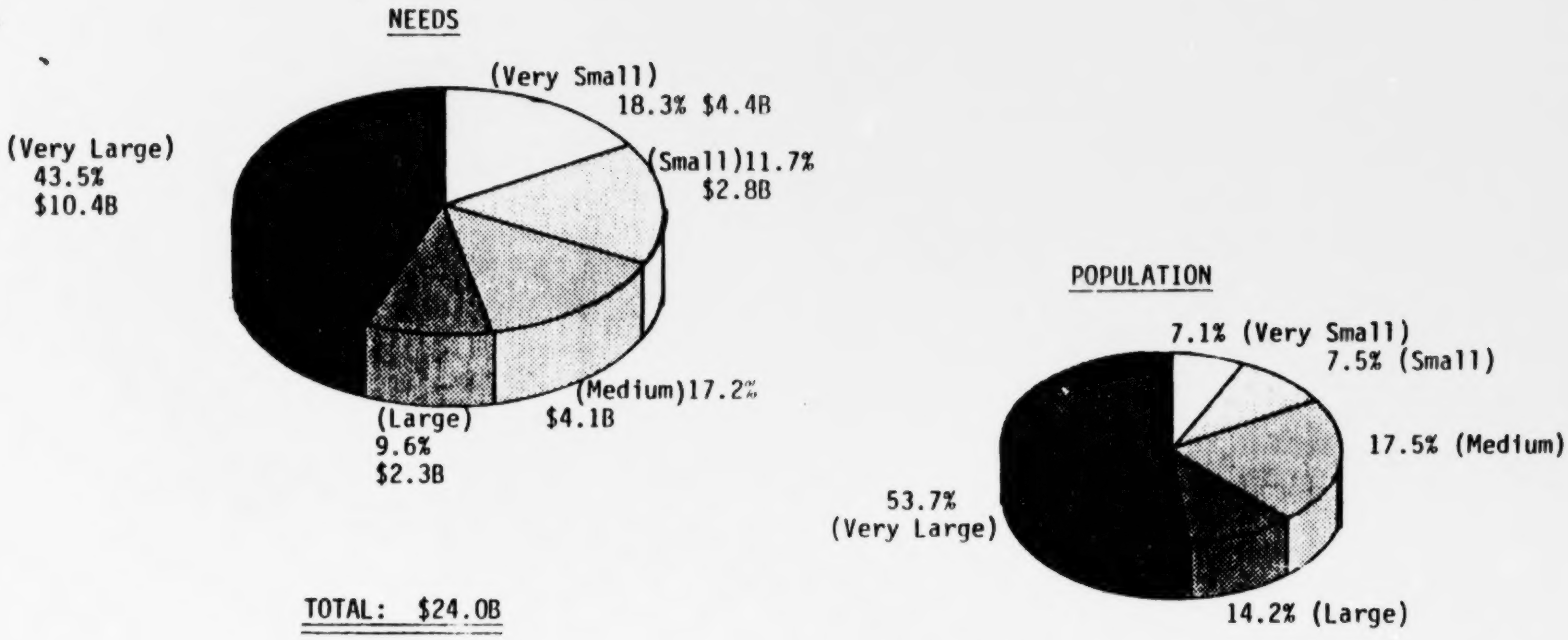
Level of Needs Remains High

As described above, the 1982 Needs Survey yielded a total backlog need estimate of $92.6 billion. By the year 2000, the need is expected to grow to $118.35 billion. Given current eligibility for Federal funding (see discussion of Concern 1), about $20-25 billion in Federal dollars would be needed to meet eligible needs. At current funding levels ($2.4 billion per year), this need could not be completely satisfied until the mid-1990s. And with current core needs expected to increase from $35.4 billion to $57.3 billion in the year 2000 (1982 Needs Survey), this would equate to 13 years of funding to meet minimum needs without accounting for inflation, remaining phased/segmented projects, and set-aside allowances.

Needs for system construction and related operations and maintenance can be broken down into three categories, generally covering eligible core needs under the 1981 amendments, continuing O&M costs, and future needs. These groupings and the magnitude of needs associated with each are described below.

FIGURE 3.3 BACKLOG TREATMENT NEEDS IN SMALL COMMUNITIES DISPROPORTIONATELY LARGE IN RELATION TO POPULATION

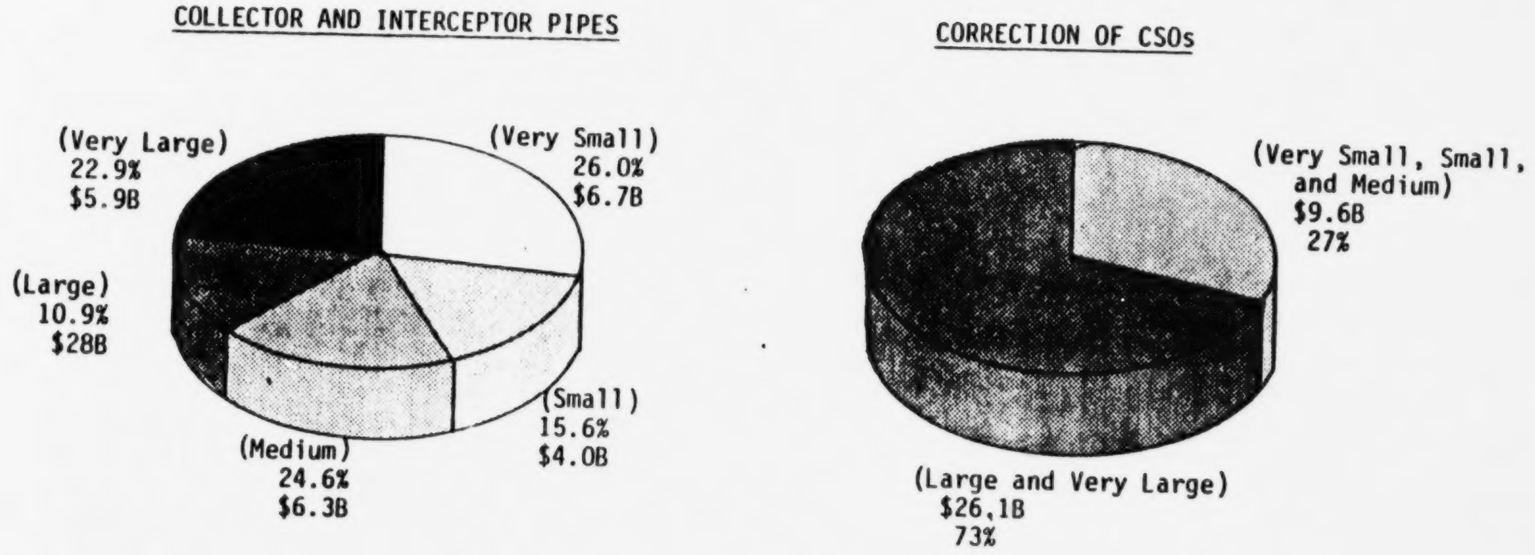
(1982 Needs Survey)



KEY:
VERY SMALL =<3,500
SMALL = 3,500 - 10,000
MEDIUM = 10,000 - 50,000
LARGE = 50,000 - 150,000
VERY LARGE =>150,000

FIGURE 3.4 BACKLOG CSO AND PIPE NEEDS

(1982 Needs Survey)



CAT. IVA & IVB = $25.7B

CAT. V = $35.7B

KEY: SEE FIGURE 3.3

Concern 1 includes immediate core needs (generally backlog needs for those categories that remain eligible under the Federal program that took effect on October 1, 1984). Based on the 1982 Needs Survey, costs in such categories to serve 1982 populations amounted to $35.4 billion, broken down as listed below.

	Cost ($ in billions)
• Category I - Secondary Treatment	20.1
• Category II - Advanced Treatment	3.8
• Category IIIA - Correction of Infiltration/ Inflow	2.6
• Category IVB - New Interceptor Sewers	8.9
	35.4

Note: The backlog estimates of the 1982 Needs Survey may overstate the cost of meeting immediate pollution control needs since the cost of adding new wastewater discharges to streams is included in the estimates for currently unsewered 1982 populations.

On the other hand, the backlog estimates do not include the cost of treating incremental flows from the population growth occuring between 1982 and the date when the facility upgrade actually occurs.

In certain instances, Category V - Correction of CSO - might also be included in Concern 1 if water quality benefits can be demonstrated (c.f. Section 201(n), CWA).

An adjustment of Concern 1 cost estimates to reflect the increase or decrease in need due to these factors has not been included. Thus the figures cited above should be viewed as only rough approximations of the dollar value of Concern 1 needs.

Concern 2 includes continuing needs for operation and maintenance costs incurred in operating facilities within performance levels required by permits and standards, maintaining equipment to ensure proper operation and service, training operators and replacing minor equipment and appurtenances. These costs cannot be completely assessed. However, as reported in the 1982 AMSA Rate Survey, current O&M expenditures by 82 communities, including Los Angeles, Chicago, and Atlanta, total $1.38 billion per year. In addition, historical trends show that total annual O&M costs nationwide have increased from $2 billion in 1972 to $5 billion projected for 1984. Bureau of Census data estimate total 1972-1982 O&M costs of $37 billion. Future costs will depend on inflation, construction of new facilities and the effectiveness of O&M programs in communities.

Moreover, poor O&M practices can be expected to be more costly in both the short- and long-term, since local governments may be forced to repair or replace both minor and major capital equipment prematurely. There are also documented cases of opportunities to decrease short- and long-term O&M budgets by operating with greater efficiency through improved energy and chemical consumption, personnel staffs, and sludge disposal techniques. Therefore, the extent to which local and State governments must fund both capital and O&M costs and the funding mechanisms available to them will determine the future allocation of funds between capital and O&M.

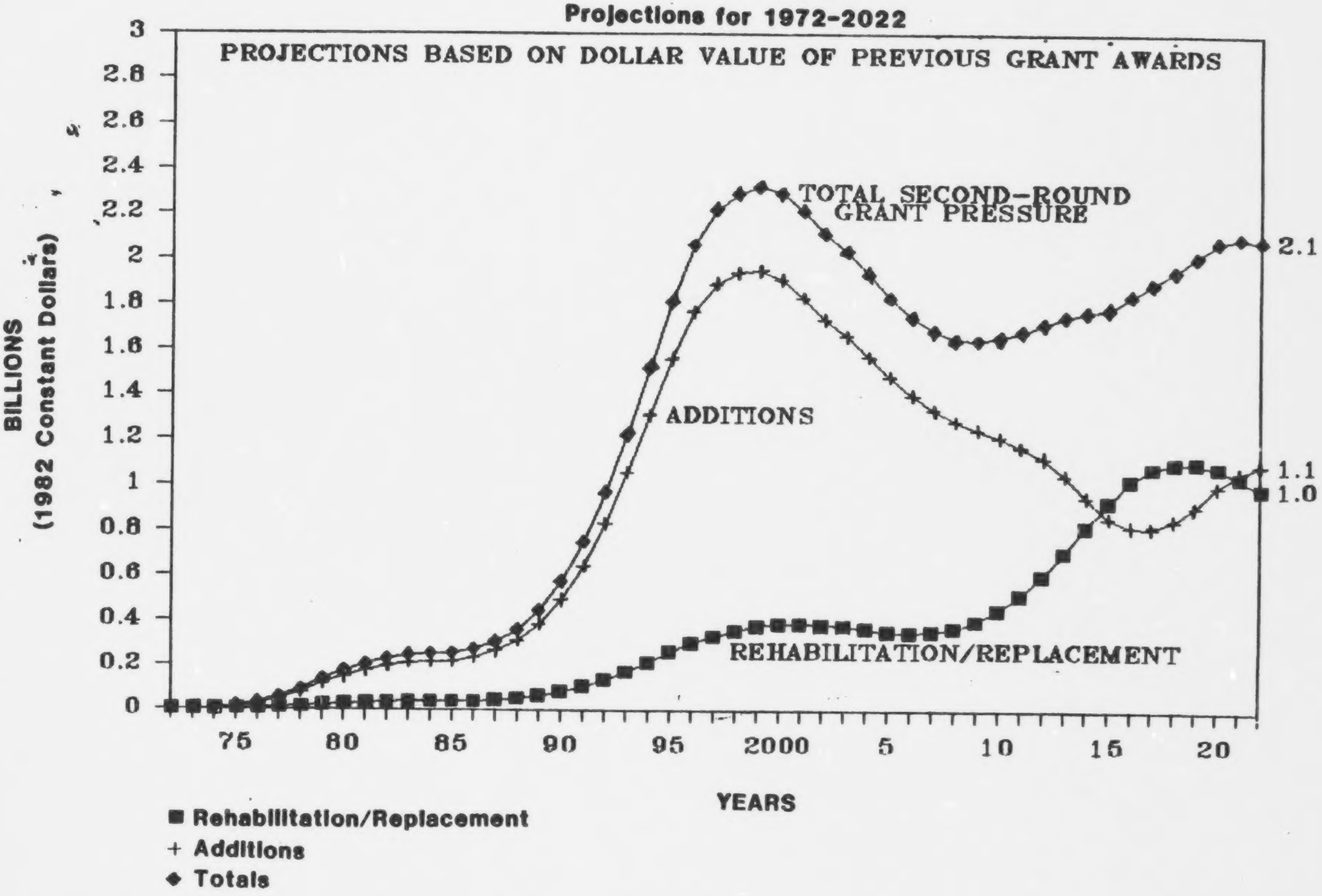
Concern 3 is future needs for delivering and serving new flows, ensuring adequate capacity and ultimate rehabilitation/replacement/expansion of facilities. The 1982 Needs Survey reports the following needs by category:

		Year 2000 Cost ($ in billions)
• Category I	- Secondary Treatment above current backlog	11.0
• Category II	- Advanced Treatment above current backlog	2.0
• Category IIIB	- Rehabilitation/Replacement of existing sewer systems	4.7
• Category IVA	- New Collector Sewers	20.7
• Category IVB	- New Interceptor Sewers above immediate backlog	8.9
		47.3

Any discussion of plant reconstruction/rehabilitation and expansion must address the inequities and disincentives to compliance that would be caused by the issuance of second-round grants (i.e., additional funding for facilities that have previously received construction grants). Second-round funding for facilities is also inequitable in terms of the distribution of limited Federal funds.

Consensus opinion on this issue underscored that the promotion of local growth and development is the responsibility of State and local governments. If the Federal government provides second-round grants at the expense of facilities that have never met standards or received Federal assistance, long-term compliance and self-sufficiency goals will be jeopardized. As shown in Figure 3.5, the pressures for second-round grants for rehabilitation/replacement and additions to previously funded facilities will grow with an implicit demand of $1 to $2 billion per year beginning by the mid-1990s.

FIGURE 3.5 REHABILITATION/REPLACEMENT & ADDITIONS TO PREVIOUSLY FUNDED PROJECTS



CSO Correction is a Large Part of the Needs

Continued Federal focus on core treatment needs means that State and local funding strategies must address the vast majority of the $35.74 billion of CSO needs. Combined sewers are designed to carry both sanitary waste and storm water. During storm events, these systems may automatically overflow, discharging untreated sewage together with storm water. Correction of CSOs is estimated to cost $35.74 billion (1982 Needs Survey). Under the 1981 Amendments [Section 201(n) of the CWA], the Governor of a State can choose to use Federal grant money for correction of CSOs if the projects are a "major priority" for the State and significant water quality improvements can be demonstrated as a result of the project. Otherwise, funding of this need will fall entirely on State and local sources.

Since the needs for CSO correction are concentrated in large urban areas, are costly to correct, may exceed the combined sources of currently available funds, and may not always result in any demonstrable improvement in water quality, funding of CSO correction may not be amenable to handling through a uniform national program. A series of studies done for the EPA Task Force on the Future Federal Role in Municipal Wastewater Treatment by EPA's Office of Policy, Planning and Evaluation (OPPE) have assessed the possible impacts on water quality from spending on core treatment needs, CSO corrections, and storm sewer projects. A summary of these OPPE studies is attached, and also is included in Appendix E.

O&M Does Need Special Attention By Federal, State and Local Governments

There has been long-standing Federal and State interest in effective facilities operations and maintenance keyed to protection of the public investment and improved compliance. Both levels of government recognize that effective O&M can extend the life of existing facilities, reduce and delay the need for additional construction, and save local governments significant capital and O&M costs. Historically, the Federal program has emphasized operations and maintenance requirments in construction grants (e.g., development of O&M manuals, plans of operation, startup services); general O&M requirements in permits; and development of State operator training capability (e.g., training of State trainers, development of curricula and materials, and construction of State training centers under Section 109(b) of the Act) and oversight and technical assistance to State training programs. State programs have also emphasized O&M implementation through construction grants and permits, as well as operator training programs primarily for certification and upgrade. Operator technical assistance and O&M incentive programs have not been used significantly in the past, but are increasing.

As a result of EPA's 1984 National Municipal Policy, changes in the construction grants program, and on-site training and technical assistance efforts in small communities, there has been increasing local recognition of their compliance responsibilities and increasing attention at all levels of government to operations and maintenance, financial management, and operator training.

Through the National Municipal Policy, EPA has emphasized that strong Federal and State enforcement efforts are the key to improving local compliance and support of improved operations and maintenance. EPA is also implementing the new first year performance certification requirements contained in the 1981 Amendments. The Agency is also considering a number of options regarding new incentives for improved O&M at Federal, State, and local levels and by the private sector. These options include:

- Establishing State operator awards programs and EPA Regional and national awards.
- Capital construction bonuses for States with good compliance rates, either modifying the allotment formula or utilizing available reallotted funds. Another option for capital construction bonuses would be keyed to the performance certification required by grantees. Where a project meets project performance standards, an allotment bonus could be provided to the State for use in its revolving fund.
- Increasing grants-related incentives, including updating of user charge systems in noncomplying communities, incorporating an O&M element in State priority systems criteria, and ensuring grantee startup services funding.
- Enforcing O&M requirements in permits.
- Providing technical assistance through disseminating information on the effectiveness of on-site training and technical assistance, costs and benefits of privately contracted O&M, cost-effectiveness of good O&M, and effectiveness of State O&M subsidy programs.
- Increasing the Federal investment in O&M through targeting additional Sections 106, 205(g) and 104(g) funds to State O&M and operator training programs, using academic training grant funds more innovatively for local assistance, and proposing Congressional consideration of tax incentives for privatized facilities with good O&M.
- Issuing consistent, coordinated policies and guidance and working with States, professional associations, and interest groups to emphasize the importance of O&M.

With the exception of statutory changes regarding State priority systems criteria, tax incentives and increasing overall State grants funding levels, the Agency can implement any of these options within existing authorities.

Major responsibilities for containing O&M, however, still rests with local governments. They must improve their own operations and maintenance management at the same time as Federal and State initiatives move forward. The private sector has a significant role in O&M programs as well, especially in the area of contracting for on-going O&M services.

CHAPTER 4: BASELINE

TRENDS AND NEEDS IN LOCAL FINANCING

Before the advent of the Federal Construction Grants Program, cities and municipalities were primarily on their own for the provision of wastewater treatment. In the absence of water quality or discharge permit requirements, wastewater treatment facilities often had lower priority in the competition for limited local infrastructure financing. Roads, public transportation, water supply, and solid waste disposal in many instances took precedence. Typically, water supplies were simply taken from upstream sources, and wastewater deposited downstream to become "someone else's" problem.

Although considerable progress has been achieved with over $40 billion of Federal assistance, huge backlog treatment needs still remain, operation and management needs continue to require local budgeting, and future rehabilitation, expansion, and replacement needs must be anticipated in the capital planning of local government programs. With the non-Federal share of construction costs doubling in FY 1985, the financial capabilities of local governments will be of paramount importance in meeting Clean Water Act goals.

Local Governments Face Problems in Meeting Wastewater Treatment Needs

Such increased reliance on local funding, however, may be in conflict with the reduced financial capability of local governments as trends in local financing over the past decade continue. The municipal bond market--the traditional source of capital for local governments--has been undergoing turbulent change due to the uncertainty surrounding the growing Federal deficit, general economic conditions, decreased investor confidence in long-term tax-exempt securities, and changes in marginal tax rates for upper bracket investors. In addition, bonds for the financing of traditional public works, such as wastewater treatment, must now compete with those issued for private-purpose projects. The end result is that many local governments are experiencing difficulties in financing public infrastructure needs, even though the municipal bond market itself is currently experiencing record sales.

To understand these trends and the challenges which local governments face in meeting their wastewater treatment needs, it is important to understand the traditional financing mechanisms they employ. Although there is some overlap, local financing can be considered in terms of two broad categories:

1) issuance of long-term and short-term debt for the financing of capital costs associated with the construction, rehabilitation, expansion, and replacement of wastewater treatment facilities, and

2) revenues from user fees, connection charges, taxes, and municipal enterprises which are used to repay revenue bonds and to pay for ongoing operation and maintenance of facilities.

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The Outlook for Long-Term and Short-Term Debt Mechanisms Is Not Good

Currently in use are a variety of long-term financing mechanisms, including general obligation bonds, limited or special obligation bonds, revenue bonds, special assessment bonds, industrial development bonds, locally issued bonds, and small denomination bonds--so-called "mini-bonds" (see Table 4.1). For short-term financing, bond anticipation notes or grant anticipation notes (where grants are available) are used.

With this variety of financing mechanisms available to local governments, it would not seem likely that they would lack the financial capability for the construction, replacement, and expansion of wastewater treatment facilities. However, most of the traditional long-term financing mechanisms have serious drawbacks:

- General obligation bonds are severely limited by statutory debt and interest rate ceilings.
- Revenue and other special obligation bonds which can escape the debt ceiling carry lower bond ratings and therefore must pay higher, sometimes prohibitive, interest rates.
- Once popular tax-exempt issues, such as special assessment and industrial development bonds, have lost much of their appeal to investors because of changes in tax laws which have lowered marginal tax rates for the highest tax brackets while at the same time have reduced the tax savings for private investors who typically employ industrial development bonds in sale/leaseback arrangements.
- Locally issued bonds and mini-bonds, while avoiding the expenses of acquiring bond ratings and issuing bonds in the municipal bond market, require a financial sophistication of communities that often have very little experience in bond marketing. Mini-bonds in particular require the sale of a proportionately much larger number of bonds because of the small size ($100 - $1,000) of their denomination.

The outlook for short-term financing is somewhat better. Bond anticipation notes (BANS) are secured by a promise to repay them with the proceeds of long-term bonds which are to be sold at a later date. Because BANS often carry a lower interest rate than long-term bonds, they can be used to delay the sale of long-term bonds until a better long-term interest rate prevails. However, State law often restricts how long local governments can "roll-over" their short term debt, posing the risk that long-term rates may actually turn out to be higher when the long-term bonds must be sold. Grant anticipation notes (GANS), secured by the grant itself, are used during the actual construction phase. GANS have the advantage that as construction proceeds, the unused portions of the GANS proceeds can be invested in an interest bearing account

TABLE 4.1

LONG-TERM MUNICIPAL DEBT FINANCING

TYPE OF BOND	METHOD OF SECURING	ADVANTAGES	DISADVANTAGES
GENERAL OBLIGATION	Secured by "full faith and credit" of municipality. This means that not only are all current sources of general revenues obligated, but also that new taxes are expected to be imposed if necessary.	Because it is backed by the full taxing authority of the municipality, it carries a lower interest rate.	There are severe limitations placed on its use due to debt and interest rate ceilings, and the need for voter approval.
LIMITED OR SPECIAL OBLIGATION	Does not obligate full faith and credit of government and specifically excludes property taxes from obligation. Instead, the bonds designate specific sources of revenue, usually taxes, for repayment.	Because they do not obligate the full faith and credit (particularly property taxes) of the municipality, most courts have ruled that these bonds are exempt from debt and interest ceilings.	The higher risk associated with these means that they must pay higher interest rates to the investor.
REVENUE	Secures bond with user charges associated with the facility being built by the bond's proceeds.	Escapes statutory debt and interest ceilings. Uses new sources of revenues created by project.	Has lower bond rating and thus carries higher interest costs. Also, bond is not marketable if project to be built will not generate sufficient revenues.
SPECIAL ASSESSMENT	Uses liens against property of those who stand to benefit from a project as collateral for bond.	Has appealed to investors with high marginal tax rates because of the bond's tax-exempt status.	Recent changes in tax laws have reduced the number of investors who have high marginal tax rates.
INDUSTRIAL DEVELOPMENT	Secured by lease payments from private investors who have used bond proceeds to build a facility.	Tax-exempt status appeals to some investors.	Limited use under Deficit Reduction Act of 1974. The narrowing of the gap between taxable and tax-exempt interest rates has significantly increased the costs of these bonds.
LOCALLY ISSUED	Can be secured by any of the above means. Principal difference is that bond terms are negotiated privately and bonds are marketed directly.	Avoids expense of obtaining credit rating and fees of bond underwriters. Lower interest rate may be negotiated because they are usually sold to investors who have a stake in the community.	Requires a level of financial sophistication that many municipalities do not have. They are also less attractive to investors because of the lack of a resale or secondary markets.
MINI-BONDS	Can be secured by any of the above means and is also locally issued and marketed. Principal difference is the small denomination ($100-$1000) of the bonds.	Same advantages as locally issued bonds plus the smaller denominations make it possible for small local investors to channel civic impulses.	Same disadvantages as locally issued bonds plus a substantially much larger number of bonds must be sold to compensate for the smaller denomination.

(a process called arbitrage), which if handled successfully can eliminate most or all of the interest cost from the GANS itself. Of course GANS are not an independent source of financing; they are merely a temporary substitute for grants.

Besides the individual drawbacks of current local financing mechanisms, certain general trends in bond markets are having a negative impact on the financial capabilities of local governments. As more and more cities have approached and hit the statutory debt ceilings placed on general obligation bonds, they have had to turn to other types of bonds which are not counted in their debt limits. Invariably these other bonds have lower bond ratings resulting in higher interest costs for the local government in order to compensate the investor for the greater perceived risk.

Another trend which has had the effect of driving up interest costs has been the burgeoning demand by municipalities for loanable funds. Competition for these funds has come not only from increasing infrastructure needs, but even more from the increasing use of municipal bonds for such non-traditional purposes as single-family housing, private hospitals, and student loans. The GAO reported that because of these factors, in just four years the annual volume of long-term municipal bonds rose from $43.3 billion in 1979 to $77.3 billion in 1982. The poor performance of the municipal bond market which has caused the gap between average yields for taxable (private) and tax-exempt (municipal) bonds to narrow has also taken its toll. It has been estimated that this reduction in the spread between private and municipal bond interest rates has increased the cost of borrowing for local governments by $130,000 for each one million dollars in bonds issued. Perhaps the best known negative impact on local government financing has been the trend towards a voter "tax revolt" which has severely limited the sources of revenues which most bonds have depended upon for repayment. Where voter approval is required, most bond issues face an almost insurmountable obstacle.

Current Revenues Are Insufficient to Meet Projected Needs

According to a survey by the Association of Metropolitan Sewerage Agencies (AMSA), user fees are the major source (74.4%) of revenue for wastewater treatment operations and maintenance. However, because of the increasing use of revenue bonds for the financing of wastewater treatment plants, user fees are being obligated more and more frequently for debt repayment as well. Depending upon the terms of the bond, repayments to bond holders may even take precedence over meeting the costs of O&M if revenues are insufficient to meet both demands. Studies by the General Accounting Office have shown that a major cause of wastewater treatment plant operating problems has been insufficient operating funds. Thus, the increased demands on user fees to meet bond repayments will only tend to exacerbate this situation. Unfortunately, the outlook is for these conditions to worsen as O&M costs increase due to the aging of facilities and general inflation.

The question of whether user fees are adequate to support operation and maintenance costs for wastewater treatment plants was definitvely documented in a study by the Government Accounting Office (GAO). According to this study of a random sample of 36 municipal treatment plants, half of them were not charging their users enough to cover current operating and maintenance costs, forcing them to rely upon other municipal revenues. However, this reliance does not appear to be viable as a long-term option since a recent survey by the Joint Economic Committee revealed that a high proportion of cities (43%) had operating deficits, and that this proportion was increasing. This means that the practice of shifting over general operating revenues to pay for wastewater treatment facilities O&M costs will become decreasingly feasible.

The same GAO study found user fee systems deficient in two other respects: 56% were not setting aside funds for rehabilitation during the life of the treatment plant, and only 3 of 36 municipalities were setting aside funds for the replacement of the plant at the end of its useful life. Thus, current user fees may not be adequate to meet the triple burden of paying off existing capital debts, financing ongoing operations and maintenance, and setting aside money for the rehabilitation and replacement of wastewater treatment facilities.

In the wake of these demands, the pressure has been great for substantial increases in user fees--a step which many communities are reluctant to take. Not only are such increases unpopular, but in many areas, a truly disproportionate and "inequitable" distribution of charges to service users would be realized by low and moderate income users. Many communities simply cannot afford to meet all of the costs associated with wastewater treatment facilities through user fees alone. The problems will continue to reduce the effectiveness of operations and maintenance, increase the long-term costs to communities through higher energy and equipment replacement costs, and reduce the useful life of the plants.

According to the same AMSA survey, the only other source of revenue which accounted for more than 3% of total revenues generated for municipal wastewater treatment financing was ad valorem (property) taxes. These taxes accounted for 5.6% of their member agencies revenues. Unlike increases in user fees, it is difficult to predict the effects of increases in ad valorem taxes on low and moderate income users. It would depend upon whether personal or real property was taxed, the indirect effects of real estate taxes on non-property owners, and other factors. However, substantial increases in property taxes are even less politically viable than increases in user fees, and because they represent such a relatively small percentage of revenues, ad valorem taxes do not hold much potential for improving the condition of municipal wastewater treatment financing.

As a consequence of the limitations on traditional debt financing mechanisms and sources of revenue, other methods are being explored to improve local government's ability to finance wastewater treatment. In the case of debt financing, these methods are aimed at enhancing the marketability and lowering the interest costs of municipal bonds. In the area of revenue generation, or more broadly, non-debt financing, local governments have taken two approaches: creating new revenues sources, such as system development charges and developer requirements; and expanding the use of revenue sources such as connection charges, special assessments, and municipal enterprises. The later are already in use, but account for only a small fraction of current revenues.

Local Governments Are Developing Alternative Financing Sources for Wastewater Treatment

Although most local governments will continue to need Federal and/or State assistance in meeting their wastewater treatment needs, local governments have also been searching for ways to enhance their financial capabilities. This has meant concentrating on finding ways to increase both their ability to borrow and their ability to generate revenues. This two-pronged approach has led to the development of alternatives which have either the effect of making municipal bond issues more attractive, or have the effect of creating new (or expanded) local sources of non-debt wastewater treatment financing:

Debt Finance Enhancement Techniques

- municipal bond insurance, and
- letters or lines of credit.

Non-Debt Financing

- connection charges
- special assessments
- systems development charges
- developer requirements, and
- municipal enterprises.

Debt Financing Enhancement Techniques Lower Interest Rates

Municipal bond insurance involves paying a premium to an insurance company that specializes in insuring bonds. This translates into a lower risk for the investor since the insurance company will pay bond holders in the event of default by the municipality. This makes the bond more attractive, thus lowering the interest rate. The advantage is that the savings in interest costs are greater than the cost of the insurance; a disadvantage is that the insurance premium requires up-front money while the interest savings are long-term.

Letters or lines of credit are one of the simplest ways a municipality has to lower its interest costs on bonds. What is involved is establishing with a bank or other lending institution a pre-arranged credit line specifically earmarked to pay bondholders when revenues are insufficient to meet the obligations of the bond. As long as revenues are sufficient, the credit line is never actually tapped, meaning no additional cost to the municipality is incurred. Even so, the assurance that an automatic mechanism for timely payment to the bond holder is available in case of temporary insolvency lowers the risk perceived by the investor, resulting in a lower interest rate for the bond. Of course, if the credit line is used it will increase the costs to the municipality, since it will be paying interest to both the bond holder and the lending institution.

Non-Debt Financing Techniques Are In Increased Use

Connection charges for public services such as water supply, electricity, and gas lines are not new. However, the incidence of their use to cover the cost of extending sewer service is on the rise, both in terms of the number of communities employing connection charges, and the size of the charges themselves. In addition to recovering the cost of sewer extension, a new trend has been to charge enough to also recoup the capital costs of annual depreciation attributable to a newly constructed wastewater treatment facility.

The use of special assessments levied against service users is also on the increase. These assessments are currently being utilized to finance new treatment facilities and rehabilitate or expand existing facilities. However, a few local governments have begun using them as a source of funds for operations and maintenance as well.

Systems development charges are levies on developers over and above connection fees and developer requirements. They are presently used to recover the costs of serving new residents with existing or new facilities. A few municipalities are also using systems development charges to fund O&M costs. Although it is not yet clear whether this use will develop into a general trend, it is yet another example of alternatives which demonstrate the search by local governments for new financing mechanisms.

Some rapidly-growing communities have looked to developers to provide needed system improvements in return for permission to build new housing. In such cases, rather than imposing charges or connection fees, the developer is required to construct or provide for the construction or expansion of the wastewater treatment facilities necessitated by the new development. The developer, in turn, would pass on such costs in the price of the new housing. This approach has the potential for providing wastewater treatment facility financing without incurring debt.

Municipal enterprises associated with wastewater treatment operations are another clear illustration of a local funding source which has multiple applications to wastewater treatment financing. The sale of treatment services to other municipalities or to private haulers, and the sale of fertilizer or crops from land treatment operations are used by many communities to offset operations, maintenance, and replacement costs. In fact, there is a general trend towards an enterprise fund approach to O&M costs in which wastewater treatment operations are designed to be self-supporting rather than compete for general municipal funds. Expanding the use of municipal enterprises then, can help fill the void left by declining Federal construction assistance.

ASSESSMENT/AVAILABILITY OF PRIVATE SECTOR FINANCING

In response to reduced Federal funding, rising interest rates, and growing difficulties in obtaining conventional financing, municipalities have become more and more interested in attracting private sector investment in wastewater treatment facilities. The private sector also is enthusiastic about investing in wastewater treatment facilities.

While privatization of wastewater treatment projects is new, as a financial transaction private sector financing, ownership, construction and/or operation of traditionally public utilities is well established. For decades, hundreds of communities have obtained their drinking water and other essential government services from private sector owned and operated sources. More recently, a number of resource recovery plants--totalling over $500 million in the past year alone--have been built and operated on a "turnkey" basis by the private sector.

The attractiveness of the concept lies in the use of accelerated depreciation of a facility and its equipment, the availability of investment tax credits, and the use of tax exempt industrial bonds--all of which may be used in wastewater treatment facilities if the transaction is properly structured. Although altered in some respects, the Deficit Reduction Act of 1984 reconfirmed the use of these tax benefits. Thus, privatization activity may be further stimulated on the part of both municipalities and the private sector.

While the private sector can not finance all wastewater treatment needs, any contribution can be significant and lessen the financial burden faced by municipalities. There may be substantial cost savings and programmatic efficiencies which can be realized if proper financing methods and overall transactional structure are employed. These are explored below.

Privatization Techniques and Transactions Are Viable for Financing Wastewater Treatment Facilities

There are numerous privatization approaches and variations: with or without equity or direct ownership, industrial development revenue or pollution controls bonds, etc. While each approach has its own particular characteristics, they all have one common element--they rely on the tax-exempt revenue bond market to raise the debt necessary for construction (from 75% to 100% of project cost, depending upon whether the equity investment is part of the transaction). As experienced with solid waste and other utility operations, wastewater privatization projects can be financed on their own merits if they are economically viable and if they incorporate adequate security mechanisms. Wastewater issues could be particularly attractive to bond buyers because, in addition to the legal and financial security aspects, the systems are literally in the ground, with users dependent on continued performance for the maintenance of public health. This creates the presumption that in the event of problems, technical or financial, all necessary remedial actions will be taken to keep a system operating.

The parties to a privatization project can be many, including the owners, the operator of the facility, the engineer who plans and designs the facility, the builder who constructs the facility, the municipality that leases the site to the owner and receives the services derived from the facility, an issuer of any tax-exempt debt, and an investment banker that raises the equity and underwrites the debt. Some of these parties, especially municipalities, will need special legal, tax, and financial advice before undertaking a project.

Not every privatization transaction can be structured to capture the benefits of tax-exempt industrial development bonds, accelerated depreciation and the investment tax credit. A transaction that can provide such benefits to the private sector is a service contract agreement with a municipality, where any combination of private sector firms finance, own, and operate the treatment facility. The firms are eligible to realize all of the available tax benefits. The private sector obtains the benefits of accelerated depreciation and the investment tax credit by using a service contract under which the private owners also operate the facility. In addition, the private sector may finance up to 80% of the facility costs with tax-exempt development bonds. The municipality may enter into a long-term lease agreement for the site and build in other protections.

The service contract agreement method is now being used extensively for resource recovery projects and is readily transferable to the financing of wastewater treatment. With wastewater treatment facilities, the opportunity is present for the private sector to pass some of the lower costs of this arrangement back to the municipality through a lower service fee which would be negotiated with a municipality.

Despite widespread interest and discussion, privatization of municipal wastewater treatment systems is still new and only a few examples currently exist. These include:

- The initiation of construction for the first stage of a plant in Chandler, AZ.
- The completion of the financial planning for a WWT plant in Norco, CA.
- The financing of a $100 million interceptor in Denver, CO.
- Bank ownership of a new interceptor in Missoula, MO.

Communities that are actively considering privatization and have published "requests for qualifications for privatization," include Salt Lake City in conjunction with Utah. Auburn, Alabama and Orlando, Florida, and other cities have already accepted construction bids.

Privatization May Offer Programmatic Efficiencies for Municipalities

Privatization may offer many advantages to municipalities. Most significantly, by minimizing Federal and State involvement in local affairs, privatization allows communities greater operational flexibility. Thus, a greater sense of local responsibility is established and projects may be more responsive to specific local needs. In addition, there may be important cost savings to municipalities. These include:

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- Reduction in User Fees. The economics of privatization may be able to combine construction savings and tax benefits into lower user fees. A properly structured transaction may be a cost-effective alternative to local communities, as measured by the user fees necessary to establish, operate and maintain a self-sustaining facility. The user fees under an acceptable privatization transaction should be lower than under 100% local funding for the same facility.

- Construction Efficiencies. Privatization proponents have argued that construction efficiencies associated with private financing transactions can lead to lowered overall costs for construction, a reduction in construction time, and greater flexibility in sizing. Such cost savings would presumably be gained by reducing delays in construction caused by Federal grant regulations for the planning, design and construction of facilities and avoiding Federal procurement laws and regulations under private financing transactions. In addition, privatization might be able to focus more closely on flow-matching the sizing of a facility to current needs, modular designs, and sequential investments to meet future needs. Proponents have argued that decreases of 20% to 40% in the capital costs of a facility can be realized.

- Operating Efficiencies. Contract operations by the private sector may make sense in a number of cases if a community cannot attract and retain the necessary talents to operate a treatment facility in compliance with discharge permit standards. In other cases, through assumed economies of scale, a private operator may be able to operate a facility at a cost less than the public operating mode, even considering a profit allowance. Centralized administration, centralized maintenance, bulk ordering of chemicals and supplies, sharing key personnel among multiple facilities, etc., could contribute to these economies.

Complexity and Federal Requirements May Limit the Use of Privatization Transactions

While privatization is a promising and feasible concept, a note of caution is that privatization by its very nature is complex, involving numerous parties and unique relationships. It is expensive and time consuming for all parties concerned to participate in the conception or execution of a privatization project. There are numerous complex technical, financial and legal considerations that must be addressed. Considerable critical analysis is required to determine the conditions under which it is a prudent mechanism for providing the public with wastewater treatment at a reasonable cost. Communities will need to acquire expertise in reviewing financial arrangements and contracts and develop oversight provisions and flexibility. In addition, privatization may prove to be more suitable to some localities (e.g., new or fast-growing communities) than to others (e.g., very large or very small communities).

Finally, the Office of Management and Budget (OMB) Circular A-102 must be observed for treatment facilities that have received Federal financial assistance and are dependent on private funding for the expansion or upgrading of facilities. In effect, this circular prohibits the title to Federally assisted facilities from being transferred to the private sector. However, privately owned components that are distinct entities in the treatment process, such as a sludge handling unit, may be added to facilities without losing their private identity.

There are other potential hindrances to privatization transactions:

- The success of privatization is highly dependent on provisons in the U.S. Tax Code, which may be subject to change because of economic and fiscal constraints.
- State or local government procurement rules may effectively prohibit privatization. For example, State or local laws or ordinances may prohibit a negotiated contract and require competitive bidding. Competitive bidding may not be the most feasible way to effect the arrangement.
- Privatization may concentrate on the immediate need for sewage treatment facilities and neglect future needs since the greatest tax benefits would be realized during the initial five year period. Thus, privatization may focus on capital investment and ignore the need to adequately finance operation and maintenance costs.
- Public Utility Commissions may require approval of user fees and fee increases, increasing the complexities associated with privatization initiatives.
- The fact that equipment intensive projects are subject to the greatest financial returns may influence the design of the plant. The greater the depreciable amount, the greater the return on the investment to the private investor. For example, some technologies are more equipment intensive than others. A biological treatment plant will have a larger depreciable cost than a land-based lagoon system as the land is not subject to depreciation.
- Small communities may be less able to take advantage of privatization. Land oriented treatment projects may not make an attractive investment for the private sector. Also, the small community may not be rated credit worthy enough to be a partner in this type of joint public/private endeavor.
- Private owners need protection from price controls, changes in discharge requirements, or other forms of regulation that might force them to accept less than a fair rate of return. This could cause negative effects on the owner's ability to provide adequate service.
- Existing labor contracts between municipalities and unions could preclude the transfer of operation and maintenance of the plant to the private sector.

ASSESSMENT/AVAILABILITY OF STATE FINANCING AND SUPPORT

The imminent reduction in the level of Federal grant funds for wastewater treatment has promoted State action to examine different options of financial assistance for local communities. Over the past decade, States have provided significant funding for wastewater treatment and have made significant progress in meeting the goals of the Clean Water Act, though individual States have varied in their sophistication and level of financial commitment. Still, a great deal remains to be accomplished if the nation's wastewater treatment needs are to be met. In light of this continuing need and the impending reduction in Federal monies, many States have taken action. For example, five States (Colorado, Florida, Kansas, New Mexico, New Jersey, and Tennessee) have already increased their own State share in anticipation of the reduced Federal share, while thirteen States are conducting comprehensive studies on alternative funding mechanisms. States also have explored methods of reducing project construction, operation and maintenance and replacement costs.

States Have Developed Various Financing Alternatives

The States' goal has been to leverage the dollars that they do have in order to support as many projects as possible, as well as to raise more dollars through innovative methods. One of the most interesting examples of fund leveraging is the Utah State Wastewater Credit Enhancement Program, which has successfully achieved a leveraging ratio of 39 to 1 by vastly improved bond ratings through State guarantee of local bonds. In addition, Georgia recently has enacted a State revolving fund that will provide for additional resources to finance future municipal wastewater treatment needs. Utah and Georgia are just two examples of many that demonstrate how States can be effective in their involvement with assisting local communities in financing wastewater treatment by methods other than grants. On the other hand, there are States whose financial involvement with wastewater treatment is not as extensive as Utah's. North and South Dakota both provide funds for cleaning up lakes but not for wastewater treatment. As demonstrated by these two States, some States are finding themselves forced to prioritize their clean water projects because of limited funds. Even with recent financing innovations such as bond marketing and special taxes, however, State resources will be inadequate to meet all continuing and future wastewater treatment needs.

Various means of financing wastewater treatment needs are available to States; Table 4.2 displays the range of financing programs that are being conducted. The most commonly employed approach designed to assist local communities in meeting their wastewater treatment needs is the use of State grants, and these are typically patterned after the Federal Construction Grants Program. California, Illinois, and New York run very large and sophisticated grant programs with large financial commitments to wastewater treatment while South Carolina's and South Dakota's programs are very modest in scope. Over half of the States use matching grants for projects that are receiving EPA wastewater treatment funds, with the State funds ranging from 5% to 25% of the eligible project costs. In more than 20 States, projects with costs that are ineligible for Federal funds are often granted State funds that cover from 15% (Minnesota) to 100% (California, Hawaii, and New Mexico) of project costs. Some States employ grants that are exclusively intended to assist projects that are not receiving Federal funds, and these funding levels range from 50%

TABLE 4.2 STATE SOURCES OF WASTEWATER TREATMENT FUNDING

STATE	MATCHING GRANTS	GRANTS TO COMMUNITIES W/O EPA HELP	LOANS FOR FACILITY CONSTRUCTION	USE OF STATE REVENUES FOR LOANS/GRANTS	STUDIES OF NEW FINANCING PROGRAMS	BOND BANKS	FINANCIAL TECHNICAL ASSISTANCE	DEBT MANAGEMENT	BOND POOL	REVOLVING FUNDS
Alabama										
Alaska	*	*		*						
Arizona					*					
Arkansas	*		*	*		*	*	*		
California	*	*	*							*
Colorado		*								
Connecticut	*	*		*	*			*		
Delaware	*									
Florida	*	*	*					*		
Georgia		*	*	*	*					*°
Hawaii	*	*	*							
Idaho	*	*	*							
Illinois		*								
Indiana	*			*						

*°Not yet established

TABLE 4.2 STATE SOURCES OF WASTEWATER TREATMENT FUNDING (continued)

STATE	MATCHING GRANTS	GRANTS TO COMMUNITIES W/O EPA HELP	LOANS FOR FACILITY CONSTRUCTION	USE OF STATE REVENUES FOR LOANS/GRANTS	STUDIES OF NEW FINANCING PROGRAMS	BOND BANKS	FINANCIAL TECHNICAL ASSISTANCE	DEBT MANAGEMENT	BOND POOL	REVOLVING FUNDS
Iowa	*			*	*					
Kansas										
Kentucky										
Louisiana										
Maine	*	*			*	*				
Maryland	*	*	*				*			
Massachusetts	*	*								
Michigan	*		*	*				*		
Minnesota	*	*			*	*				
Mississippi			*							
Missouri	*	*	*	*			*	*		
Montana					*	*				
Nebraska	*			*						
Nevada			*			*				

TABLE 4.2 STATE SOURCES OF WASTEWATER TREATMENT FUNDING (continued)

STATE	MATCHING GRANTS	GRANTS TO COMMUNITIES W/O EPA HELP	LOANS FOR FACILITY CONSTRUCTION	USE OF STATE REVENUES FOR LOANS/GRANTS	STUDIES OF NEW FINANCING PROGRAMS	BOND BANKS	FINANCIAL TECHNICAL ASSISTANCE	DEBT MANAGEMENT	BOND POOL	REVOLVING FUNDS
New Hampshire	*			*		*				*•
New Jersey	*		*		*			*		*•
New Mexico	*	*		*				*		
New York	*				*			*		
North Carolina	*	*					*	*		
North Dakota										
Ohio			*							
Oklahoma										
Oregon			*							
Pennsylvania	*			*	*					
Rhode Island	*									
South Carolina		*		*				*		
South Dakota										
Tennessee			*							

TABLE 4.2 STATE SOURCES OF WASTEWATER TREATMENT FUNDING (continued)

STATE	MATCHING GRANTS	GRANTS TO COMMUNITIES W/O EPA HELP	LOANS FOR FACILITY CONSTRUCTION	USE OF STATE REVENUES FOR LOANS/GRANTS	STUDIES OF NEW FINANCING PROGRAMS	BOND BANKS	FINANCIAL TECHNICAL ASSISTANCE	DEBT MANAGEMENT	BOND POOL	REVOLVING FUNDS
Texas			*					*		
Utah			*							
Vermont	*	*				*				
Virginia					*					
Washington	*	*	*							
West Virginia	*	*	*	*°	*				*	
Wisconsin	*	*								
Wyoming		*	*							

*° Not yet established

to 80% of the project cost. However, in light of increased demands on State funds, almost all current State financial assistance programs will have to be modified in order to effectively assist in meeting all wastewater treatment project costs.

Current State Emphasis is on New Aspects of Loans and Loan Guarantees

State emphasis appears to be shifting from such heavy reliance on grants to serious exploration of the various ways that loans and loan guarantees, bond banking and bond marketing, technical support, and credit enhancement techniques can be employed in assisting local communities. Some of these alternative financing methods leverage dollars to fund more projects, and others raise more revenues to be used for project funding:

- As of August 1982, 13 States had loan programs designed specifically to assist local governments with wastewater treatment projects. Of these programs, nine provided loans for both federally funded and ineligible projects.

- At present, for projects receiving Federal assistance, loans range from 10 to 25% of the total costs, and for projects with no Federal funding, 100% of the costs are usually covered. Loans are generally secured by local taxes or sewer charges and are occasionally secured by other means.

- Georgia has recently enacted a State revolving fund, although it will not be in operation until 1985. A study, expected to be completed by the end of 1984, is reevaluating local finance needs, and will provide recommendations concerning program management procedures and funding levels.

- Loan guarantees are being considered at the departmental or legislative levels in Arkansas, Oklahoma, South Carolina, and Utah. In addition, Massachusetts has pursued legislation that would permit the State to provide 90% pre-financing of local construction grant projects with funds that would be repaid through the 75% Federal match and a 15% State grant.

- To date, seven States have established bond banks, one State has developed a bond pool, and three States have either established or are in the midst of establishing revolving loan funds. Maine, Nevada, New Hampshire, North Dakota, and Vermont allow bond banks to purchase the bond issues of a number of small localities and reissue their own lower interest bonds (backed by the aggregate local bond issues) in order to raise money for wastewater treatment loans.

- Alaska, Maryland, and North Carolina assist in the marketing or selling of bond issues, the proceeds of which are used toward project funding.

Effective as many of these mechanisms can be, they all require some source of revenue, and the States are hard-pressed to generate more money. The predominant sources of State monies for many of these grant and loan programs are general obligation bonds, revenue bonds, current State revenues, and specific taxes. State grant programs are funded primarily in one of three ways: State current revenues (8 States use this method), State general obligation bonds (used by 14 States), or a combination of the two (6 States). However, these particular sources of State revenue are becoming more strained because of the demands of competing infrastructure needs in addition to wastewater treatment projects. The States are being forced to assume more and more fiscal responsibility for many public projects as the Federal government is reducing its share, and the already limited amount of State funds is being even more severely stretched because of these new pressures. As a result, many innovative loan options may go unfunded.

State Are Exploring Innovative Approaches for Future Needs

For the States that apply a portion of their revenues to wastewater treatment financing, the increased burden resulting from the decreased Federal share will not likely be supported by these revenues and instead will need to be assumed by other financing mechanisms. These mechanisms take various forms and can provide effective responses to revenue problems that are emerging as a result of greater demands on State monies.

The application of monies from specific taxes or set-asides (such as inheritance and tobacco taxes in Idaho, mineral royalty taxes in Wyoming, and oil and gas revenues in California) to wastewater treatment is gaining popularity. Some of these taxes are voluntary; for example, North Carolina provides counties with the option of levying a .5% tax on tobacco goods specifically for application to wastewater treatment. Another growing trend in obtaining funds is the charging of taxes and fees to entities engaging in activities that either cause or exacerbate water pollution problems, as Wyoming does with its coal impact tax. Another alternative source of monies are various mechanisms for dealing with loan defaults. In the event that a locality defaults on a loan, Kentucky may levy a tax of up to 2% on customer water service, and California and Ohio are empowered to seize a facility (eminent domain powers) and impose and collect user charges to cover an unpaid loan. However, only a few States have devised and currently employ such mechanisms. Currently, various studies and evaluations are being undertaken by other States in search of ways and means to alleviate the burden of increasing the amount of already limited funds.

The issue of equity also will play an important role in the States' decisions on which communities will receive State financial assistance for their wastewater treatment needs. Currently, small communities such as those in New Hampshire and Vermont have the greatest unmet need for wastewater treatment facilities. Of all communities affected by the reduced Federal share, 77% of these are very small, with populations of less than 3,500. However, these communities account for only 13% of the affected population, while 58% of the affected population lives in very large communities with populations in excess of 50,000. In terms of economy of scale, projects in very large metropolitan areas are much more economical to finance than those in small rural areas because more people benefit from the project, user charges per capita are lower due to the large population able to share the cost, and the metropolises themselves are more financially flexible. In addition to the question of the economical allocation of funds, the question of who receives the limited funds must first be considered. Many of these small rural communities have waited for years to become eligible for funds, and now that they are on top of the State priority lists, project eligibilities and Federal funding have been reduced. Thus, the States will have to seriously evaluate their project funding criteria in order to assure a reasonable degree of equity.

Much of the focus of State funding has been on completing projects that are already underway or on beginning projects for which there is an obvious need. The funds have been directed toward meeting core needs, but now, with the changes in the Federal Construction Grants program, other concerns are emerging as priority to the States. The operation and maintenance of the constructed facilities is now acknowledged as being an equally serious concern as is the expansion, rehabilitation, and replacement of the facilities. At present, only New York and New Hampshire provide local subsidies based on effective operations and maintenance. New York pays approximately 17% of annual operations and maintenance costs to communities that maintain effective O&M throughout the year. Communities apply for funds from the State and are reimbursed from available funds. New York appropriates approximately $33 million annually and last year assisted a total of 505 communities. New Hampshire agrees to pay 80% of the grantee's 25% share of construction costs at the rate of one-twentieth of the bonded indebtedness plus interest over a 20 year period. The State pays the communities' annual bond costs as long as the community meets its permit limits and maintains effective operations and maintenance. A total of 90 plants participate at an annual cost to New Hampshire of about $10 million.

Pennsylvania subsidizes the grantees' share of construction costs, but the subsidy is not linked to O&M performance. The State pays 2% of the grantee share annually. In 1983, 945 communities received a total of $17,100,000. Massachusetts subsidizes up to one-half of a community's annual chemical costs. This is a form of an O&M subsidy but it is also not contingent on effective O&M.

The Agency intends to evaluate these subsidy programs, to provide information to States on their effectiveness, and to encourage voluntary State implementation in the second round of a SRF program.

Although O&M and compliance are viewed as essentially local responsibilities, many States are increasing their O&M training efforts and working to develop self-sufficient State/local operator training programs. States are also re-orienting their O&M and training programs to ensure permit compliance.

Most States have traditionally relied heavily on Federal grants (primarily Section 106 of the Clean Water Act) to support State-wide O&M and operator training programs. Since 1982, additional Congressional add-on funds under Section 104(g)(1) are being used by States to provide on-site training and technical assistance to operators of small municipal treatment plants, and to develop improved financial management and user charge systems to monitor and recover costs of O&M. A majority of the States have established training centers, under Section 109(b) funding authority, to provide entry level and continuing in-service operator training. A total of 44 States maintain mandatory operator certification programs with increasing emphasis on demonstrated operator capability to operate and maintain the facilities.

CURRENT FEDERAL PROGRAMS

There are a variety of Federal programs which in one way or another contribute funds to the planning, design, and construction of municipal wastewater treatment facilities. But although the EPA, the Farmers Home Administration, the Department of Housing and Urban Development, the Economic Development Administration, and the Department of Health and Human Services all provide funding sources, the similarity ends there. Some programs provide grants and some provide loans. Some are based on a needs test and others are not. Some have stable funding, others are being reduced, and one is being phased out altogether. These Federal programs also vary significantly in terms of what types of communities may apply for assistance, eligibility requirements, and the level of government which determines eligibility. Most significant however, is that only one program, the EPA Construction Grants Program, is dedicated solely to wastewater treatment and water quality goals.

Because of the multiplicity of funding sources and different legislative intents, Federal assistance has not been well-coordinated, producing gaps in the equitable distribution of Federal monies. However, even with coordination, it is apparent that their combined resources will cover only a portion of current or future needs, particularly as overall funding declines (see Table 4.3). By far the largest reason for this decline is the reduction in funding for the EPA's Construction Grants Program which currently accounts for about 90% of all Federal assistance. To put the pivotal role of the Construction Grants Program into context though, it is necessary to present an overview of the other Federal programs, especially in terms of what they can do and what limitations and restrictions they must abide under.

Farmers Home Administration (FmHA) Provides Limited Financial Assistance to Small Communities

The Farmers Home Administration currently administers two programs. The Water and Waste Disposal Systems for Rural Communities Program is a loan/grant program which provides money to States, counties, cities, non-profit corporations, and Indian tribes for use in rural communities of less than 10,000 people, although preference is given to communities of less than 5,500. Its budget for FY 1984 is $360 million, with 75% ($270 million) earmarked for loans and 25% ($90 million) in grants. Interest rates range from the prevailing market rate for rural bonds down to 5%, depending upon the proportion of families whose median incomes fall below a specified poverty level. However, the Government Accounting Office determined that historically less than a third of these funds have gone to wastewater treatment. This implies that less than $90 million in loans and less than $30 million in grants were actually available in FY 1984 to supplement the Construction Grants Program.

FmHA also administers the Community Facilities Loan Program, which provides funding to the same types of communities described above. There are no grants available, however, and wastewater treatment facilities are only one of a great many types of facilities for which these loans can be used, such as hospitals, courthouses, and recreation facilities.

TABLE 4.3

FEDERAL SOURCES OF WASTEWATER TREATMENT FUNDING

PROGRAM	CONCERNS 1	CONCERNS 2	CONCERNS 3	ELIGIBLE COMMUNITIES	TYPE OF FUNDING	ADVANTAGES	DISADVANTAGES	TOTAL PROGRAM FUNDING FY 1984	%/AMOUNT PROVIDED FOR MUNICIPAL WWT*
EPA CONSTRUCTION GRANTS	●		●	State and local governments	Grants of 55-75% for cost of constructing wastewater treatment plants.	Provides over 90% of all Federal assistance.	Discourages self-sufficiency and local initiative. Encourages second-round grant requests. Does not always target communities most in need of assistance. Is being phased out. Limited funding for future needs.	$2.4 billion	100%/ $2.4 billion
FARMERS HOME ADMINISTRATION WATER AND WASTE DISPOSAL SYSTEMS FOR RURAL COMMUNITIES	●		●	States, counties, cities, and non-profit corporations for use in rural communities of less than 10,000 and Indian tribes. Need based criteria	Loan and loan/grant combinations. Interest rates vary according to need. Grants available for up to 75% of total project costs.	Water and waste disposal are the only types of facilities it finances.	Program was cut in half in 1982. Interest rates have risen from original flat rate of 5%. Less than 1/3 of funds have gone to wastewater treatment. Serves only rural communities.	$360 million	32%/ $115 million
FARMERS HOME ADMINISTRATION COMMUNITY FACILITIES LOAN	●		●	Same as above.	Loans only. Variety of other types of facilities available. Is actually an interest rate subsidy program.	Lowers interest costs of needy rural communities.	Requires project to be based upon sources of money sufficient to repay loans. Only a fraction of its funds go to wastewater treatment. Serves only rural communities.	$130 million	<1%/ <$1 million
HUD COMMUNITY DEVELOPMENT BLOCK GRANTS	●		●	States, counties, and local governments. Need based and competitive.	Grants.	Can help states set up self-supporting programs. Funding appears to be stable.	Goals are economic opportunity and suitable housing, not water quality per se. Only 6-7% of funds go to water and sewer projects combined.	$3.5 billion	2%/★ $69 million
ECONOMIC DEVELOPMENT ADMINISTRATION GRANTS FOR PUBLIC WORKS AND DEVELOPMENT FACILITIES	●			State and local governments, economic development districts, regional planning commissions, and non-profit organizations representing a redevelopment district.	Grants and grant/loans, although loans are rarely used.	Not applicable.	Planned for phase-out in FY 84. Main goals are economic growth and creating jobs. Funds only wastewater collection, not treatment. Does not fund residential wastewater collection.	$170 million	10%/★ $17 million
OFFICE OF COMMUNITY SERVICES IN THE DEPARTMENT OF HEALTH AND HUMAN SERVICES	●	●		Regional organizations for technical assistance to small communities.	Grants.	Technical assistance grants can save many more dollars in the construction, operation and maintenance of facilities than the actual dollars expended.	Funding is only in the $2 million per year range.	$2 million	100%/ $2 million

* Total funding in FY 1984 approx. $2.6 billion

★ Approximate percentage

HUD Community Development Block Grants Provide Little Support to the Construction of Wastewater Facilities

The Department of Housing and Urban Development makes grants to States, counties, and cities, based on need. Community Development Block Grants (CDBG) are competitive, using a complex formula that takes into account population, poverty level, housing conditions, and local economic growth. Here again, wastewater treatment facilities are only one of many types of eligible projects. Water supply and wastewater treatment facilities together account for only 6-7% of CDBG grants, amounting to about $250 million a year for both. This is not surprising though, since the legislative intent of this program is economic opportunity and suitable housing for persons of low and moderate income, not water quality per se.

Economic Development Administration (EDA) is Planned for Phase-out in FY 1984

EDA provides grants (and on rare occasions, loans) to State and local governments, economic development districts, regional planning commissions, and nonprofit organizations representing redevelopment districts. Its main goals are to spur economic growth and create jobs. Wastewater collection projects, but not wastewater treatment, are eligible. Its effect has been negligible and it is planned for phase-out in FY 1984.

Office of Community Services Offers Technical Assistance Grants

Falling into a different category because of the ineligibility of actual construction costs, are the grants available from the Office of Community Services within the Department of Health and Human Services. These grants are awarded solely to regional organizations to provide technical assistance to small communities for the planning and design of wastewater treatment facilities. Conceivably, this could complement the loss of funding for Steps 1 and 2 within the Construction Grants Program. However, present funding is only $2 million per year.

The Construction Grants Program is the Primary Source of Funds

Even at a reduced funding level of $2.4 billion, in FY 1984 the Construction Grants Program accounted for over 90% of all Federal funding for wastewater treatment needs. Although exact figures are not available, the best estimate of Federal assistance which will continue to be available from the other previously mentioned programs is less than $200 million. Thus, it is clear that the Construction Grants Program is and will continue to be the major form of Federal assistance for municipal wastewater treatment. However, it should be noted that Concerns 2 and 3 are not addressed by the Construction Grants

Program, although Clean Water Act Sections 106, 205(g), 104(g)(1) funds provide limited State support for O&M (Concern 2) activities. With respect to Concern 3, one of the specific intents of the 1981 Amendments was to avoid second-round grant pressures for replacement and expansion of facilities. In order for all categories of needs to be met, both in the present and in the future, a revised Construction Grants Program will be necessary.

Current Federal Programs can be Used as Models for Financial Delivery of a New Program

While it is apparent that current and anticipated Federal funding sources are inadequate to meet all backlog and future needs, the question remains whether present Federal programs, or elements of these programs, could be used as a model for financial delivery of a new or revised program. In looking at the array of current Federal funding programs for wastewater treatment, certain elements do seem to offer constructive ideas for a revised Construction Grants Program framework:

- Loans on the model of FmHA interest-subsidy programs could be used as a way of leveraging Federal assistance dollars.
- HUD's block grant approach could be employed to enable States to establish their own loan or credit enhancement programs, thereby encouraging self-sufficiency.
- Technical assistance grants--like those under Section 104(g)(1) and through the Office of Community Services--have the potential to reduce costs in far greater proportion than the actual dollars granted because of the long-term savings from more efficient construction and O&M procedures.

CHAPTER 5: MAJOR FUNDING OPTIONS

OVERVIEW OF EVALUATION CRITERIA

EPA--aided by its multi-disciplinary Task Force on the Future Federal Role in Municipal Wastewater Treatment, the Management Advisory Group to the Construction Grants Program, numerous Federal and State government agencies, and other public-interest groups--identified five major funding alternatives that might provide feasible mechanisms for the support of wastewater treatment plant needs:

- Municipal financing
- Municipal bonds with Federal credit enhancements,
- Federal loans,
- Federal grants, and
- Leveraged and unleveraged State revolving funds.

The funding options were evaluated in relation to the extent that they conform to the areas of consensus and how well they meet four criteria:

- Effectiveness as measured by how quickly an option will target funds to meet core treatment needs, the ability to promote capital formation for State/local self-sufficiency, and the potential flexibility in influencing long-term compliance.

- Efficiency as measured by the ability to allow communities to meet wastewater treatment requirements at the least cost, to encourage the use of appropriate low-cost capital and O&M solutions, and to increase State flexibility in the use of funds.

- Equity as measured by the potential flexibility in addressing the issue of affordability across communities, and the potential fiscal impacts on Federal, State, and local budgets.

- Feasibility as measured by the complexity (and related cost) associated with administrative requirements to Federal, State, and local governments, and any potential negative political or legal precedents.

Funding options were also assessed as to the presence and extent of the following undesirable features:

- Creation or use of Federal off-budget entities to manage or oversee a new funding alternative.

- Creation of large contingent liabilities for the U.S. Treasury.
- Creation or use of mechanisms that would result in significant net increases in Federal tax losses.
- Direct Federal assistance that would expand project eligibilities or increase the grant share, thus undercutting the CWA goal of State and local long-term self-sufficiency.

The pages that follow summarize the five major funding alternatives in terms of their utility as an element of a transitional program that will provide for the attainment of the long-term goals of State/local self-sufficiency and compliance with the CWA.

MUNICIPAL FINANCING

This option was analyzed as the "baseline" case. Traditionally, State and local governments have obtained funds for large capital projects by issuing long-term bonds. Borrowing at the State and local government level has been necessary because these governments utilize most, if not all, of their available revenues to pay current operating expenses. Thus, there is little or no available surplus to pay for large capital improvements on a "pay as you go" basis.

A key feature of municipal bonds is their exemption from Federal (and in most cases, State and local) income taxes. Since purchasers of municipal bonds are willing to accept lower interest rates to avoid taxation on the interest, issuers of municipal bonds can finance capital projects at interest rates which are lower than those available to private borrowers.

Municipal bonds are generally classified as general obligation, limited obligation and revenue bonds:

- General obligation bonds are secured by an unconditional pledge of the issuing government to levy unlimited taxes to retire the bonds. Due to strong security features, the interest rates of general obligation bonds are generally the lowest available.

- Limited obligation bonds and revenue bonds are obligations of the issuer payable from a specifically designated source. No taxes are levied or pledged as a backup. Because the issuer is obligated to pay debt service only from specified sources, limited obligation and revenue bonds generally are considered to be higher risk investments and customarily carry a lower credit rating and higher interest cost than general obligation bonds.

A more recent financing innovation has been privatization, which refers to involvement of the private sector in the financing, ownership, and operation of public facilities. Under privatization, private companies are able to take advantage of certain Federal tax benefits such as depreciation and tax credits that cannot be used by the public sector. In conjunction with the tax-exempt status of industrial development bonds, there may be opportunity for significant reductions in the financial burdens faced by communities (see also Chapter 4, Assessment/Availability of Private Sector Funding).

Advantages

- Tax-exempt bonds are the traditional State/local financing source and would not burden municipalities with increased administrative responsibilities.

- Such financing methods would allow State/local control of funding capital projects, resulting in the continuation of delegated program reponsibilities.

- Use of revenue (and other) bonds may allow issuers to avoid statutory debt ceilings.

- Privatization may speed the pace of construction and, because of construction and operating efficiencies, may pass on significant cost savings to local governments in terms of reduced user fees, construction and operating efficiencies.

Disadvantages

- Many communities may not be able to rely solely on this option, and thus construction and compliance goals will not be met.

- While the issuance of municipal bonds requires no direct Federal participation, indirect financial support would be provided through exempting bond interest earned from individual and corporate income tax. Such tax expenditures, or loss of tax revenues, are of great concern to the U.S. Department of Treasury.

- Municipal bond market has recently been plagued by high interest rates, increased volatility, federal regulation, and declines in participation from institutional investors.

- General obligation bonds are often restricted by debt ceilings and usually require voter approval.

- Revenue bonds usually contain restrictive covenants which may restrict operations.

- Municipal financing lacks controls needed to target funds to buy out core needs. (This disadvantage could be mitigated by strong enforcement actions.)

- The tax-exempt feature of municipal bonds and the tax benefits available under privatization are subject to change by the Congress and the Supreme Court.

Usefulness as a Component of the Transitional Program

As long as their tax-exempt feature remains intact, municipal bonds are a feasible method to be used as one element in achieving State and local self-sufficiency. And, in conjunction with private sector support, it may provide a partial solution to meeting some wastewater treatment construction needs and in keeping O&M costs in the affordable range. However, at this time, municipal financing alone will neither adequately promote the capital formation needed to meet future needs nor necessarily promote the goals of long-term State and local self-sufficiency and compliance.

MUNICIPAL BONDS WITH CREDIT ENHANCEMENTS

Federal Guarantees

Under this approach, no Federal grants are made. Rather, the Federal government guarantees the repayment of the municipal bond although the local government remains responsible in the first instance. Due to the full faith and credit backing of the Federal government, State and local issuers are able to market their bonds at reduced rates. No insurance premiums would be charged. The Federal government absorbs the costs of administering the program and any losses incurred from defaults by local governments.

Advantages

- Improves the marketability of State and local debt, especially those issuers with credit access problems.
- Lowers the interest rates of State and local bonds, thereby reducing their debt service.
- Allows States and localities to use bonds other than full faith and credit obligations, thereby freeing up general obligation debt capacity for other purposes.

Disadvantages

- Shifts the risks of non-payment from the investor to the Federal government; the U.S. Department of Treasury has a general rule against Federal guarantee of tax-exempt debt because of the risk of default and potential for tax losses.
- Unless strictly enforced, future forgiveness of defaulted loans may be seen as a free financing source.
- Excessive use of Federal guarantees may drive up interest costs of non-Federally backed municipal bonds.
- Another Federal program may further complicate the municipal credit market and impose control in the manner in which States and localities may issue debt.

Usefulness as a Component of the Transitional Program

Federal guarantees are not a very useful device in promoting State and local self-sufficiency. Although this option may reduce interest costs, it may create a dependency on back-stop credit devices with only a marginal reduction in overall debt service burdens.

Federal Interest Subsidies

Under this alternative, local governments issue bonds to pay for the construction of wastewater treatment and collection projects. Each year, the Federal government pays local governments an amount that reduces the effective interest rate on local borrowing to a lower rate, such as 5%. Thus, the Federal government subsidizes local debt service.

This debt-service subsidy could be combined with a taxable bond option; that is, local governments elect to borrow funds using taxable bonds. Local governments would pay a higher nominal interest rate for these funds, but Federal subsidies would reduce the effective interest rate through annual payments.

Advantages

- Since communities with low financial capabilities are likely to pay higher interest rates than communities with greater capabilities, a Federal subsidy that reduces the effective rate of borrowing to 5% could provide a larger subsidy to the communities with low financial capability.
- The taxable bond option would reduce Federal tax losses that result from the tax-exempt status of interest on State and municipal bonds.
- By withholding interest and amortizing payments to local governments, an incentive to comply with performance standards could be implemented.

Disadvantages

- The interest subsidy spreads the required Federal expenditures over an extended period of time.
- Since local governments would depend upon the Federal government to provide the debt service subsidy, this option would not promote State and local self-sufficiency.
- This option could require increasing the Federal dollar input for each successive year.
- If the Federal subsidy payments are made from annual appropriations, there will be uncertainty about future levels of funding. This may increase the risks borne by bond holders and, concomitantly, the interest rates of the local bonds.
- This option would be complex to administer. It would require calculating separate subsidy levels for each local community.

- Although this option could be designed to help local communities fund future treatment capacity, some statutory limit would likely be placed on the extent of future needs to be funded. Once the limit was met, local communities would be left to fund their own needs.

- Unless complemented with some grant aspects, this option cannot contribute the significant cost share available under the current grant program.

- Shifts the risk of non-payment from the investor to the Federal government, providing for possible contingent liabilities to the U.S. government due to defaults as late payments.

Usefulness as a Component of the Transitional Program

The Federal debt service subsidy option does not appear to be a good vehicle for promoting local self-sufficiency. While it may provide proportionally more support to communities with less financial capability, it encourages local governments to rely on the Federal government for financial support.

FEDERAL LOANS

Under this option, the Federal government lends money to local governments at low interest rates (e.g., at 5%) with level repayments over a 20 year period. Federal loans would be made only for portions of projects that are currently eligible to receive grants. Local governments would finance the non-eligible portion of projects through tax-exempt bonds issued on the municipal bond market.

The option could be structured so that States provide a match for Federal loans. That is, the Federal government would loan local governments 90% of eligible costs, and the State would loan the remaining 10%. States might also be made responsible for administering the loans and collecting local repayments.

Advantages

- This option reduces the Federal tax losses that result when local governments issue tax-exempt bonds to pay for the 45% eligible costs not currently funded under the Construction Grants Program. It does not eliminate Federal tax costs, however, since local governments will still issue tax-exempt debt to finance project costs that are not eligible for funding.
- In targeting monies to eligible needs, this option increases the likelihood that those needs will be met, and that construction will be carried out in a timely manner.

Disadvantages

- The option does not promote State or local institution-building or self-sufficiency. It substitutes one Federal program for another and potentially by-passes State governments. Local governments will continue to rely on the Federal government for low interest loans, and no long-term source of capital is created.
- The option provides no additional flexibility in decisions on what types of needs to target, or in what projects should receive additional funds.
- This option creates substantial contingent liability for the Federal government, and does not adequately leverage the Federal dollar.
- This option is very expensive to both the Federal and local governments. The Federal government borrows at a taxable rate that is higher than the local tax-exempt rate. Although

the Federal government recoups some of the difference between the taxable and tax-exempt rates through income taxes on interest earnings, it must still pay debt service on its borrowing. In order to shift the full cost of this debt service to local governments, the Federal government would have to charge local governments high interest rates.

- Even at low interest rates, the local governments pay higher costs than they would have under the current Construction Grants Program. The EPA eligibility constraint requires that the option only provide funds for the grant eligible portion of projects. Currently, EPA provides grants to local governments at 55% of eligible project costs. This grant is roughly equivalent to a zero-interest 100% loan for eligible project costs--that is, it costs local governments roughly the same amount to finance wastewater facilities if they receive a zero-interest loan for the entire amount of eligible costs, or if they receive a grant for 55% of eligible costs and borrow the rest at market interest rates (e.g., 10.2%). Consequently, if the Federal government charges any interest on the loans, it will cost local governments more than a 55% grant. The only way that the Federal government can make this option attractive to local governments is by expanding the eligible categories.

- While this option reduces losses to the Treasury as tax-exempt bonds are not issued, it does not eliminate Federal tax losses. Local governments will still issue tax-exempt debt to finance costs that are not eligible for funding.

- Under this funding alternative, debt service is paid twice on the same amount of capital. The Federal government pays debt service on its borrowed funds and local governments pay debt service (albeit at low interest rates) on the Federal loans.

Usefulness as a Component of the Transitional Program

The direct Federal loan option is not considered an effective alternative means for financing wastewater collection and treatment. It provides no additional long-term capital to meet future wastewater facility needs nor does it promote local flexibility or self-sufficiency. While the option reduces the Federal tax costs that result from large amounts of tax-exempt borrowing, it is expensive because it results in large debt service costs to Federal and local governments and substantial Federal contingent liabilities.

FEDERAL GRANTS

This option encompasses the current project grant program, whereby the Federal government provides annual grants for wastewater treatment from annual appropriations. These funds are allocated to States on the basis of a complex formula that takes State population and wastewater needs into account. The Federal government specifies what class of wastewater needs (e.g., treatment, interceptors) are eligible for funding, and the proportion of eligible costs that can be funded with Federal funds.

State governments establish priorities for funding and a list of local wastewater treatment and collection projects that will be funded. The States administer the Federal grants and provide matching State grants. Local governments issue bonds to finance project costs that are not funded through Federal or State grants.

Advantages

- The Federal grant system for wastewater treatment is in operation and is effectively managed and delegated. EPA, States and local governments know and understand their roles; no major administrative changes would be required.
- Funds are directly targeted for State and nationally designated needs. Thus, Federal monies are effectively used to meet specific wastewater treatment and objectives.
- The current 55% Federal share provides for a very high dollar leverage, unlike the previous 75% Federal share. Thus, it results in lower cost to the Federal government and increased local responsibility.
- The Federal grant program allows States some flexibility in selecting which projects to fund. It does not allow them flexibility, however, in deciding the types of needs to be funded.
- Extensive State involvement in the program is provided through delegation and development of State priority lists.

Disadvantages

- The grant program does not promote long-term capital formation for State and local self-sufficiency. Since Federal grants substitute or replace State/local expenditures, the program does not provide adequate incentives to transfer the true cost of treatment and collection to the users of the system and does not encourage the development of State/local sources of funding.

- When a program of Federal grants is terminated, other sources of funding will not be immediately available unless States and local government. have undertaken adequate financial planning for funding future needs.

- Although a 55% Federal share provides for high short-term leveraging of dollars, for every dollar invested by the Federal government, one dollar or less is targeted to immediate treatment needs due to the provisions for State mandatory set-asides and discretionary uses of funds for otherwise ineligible projects.

- The large number of remaining "grandfathered" phased/segmented projects which are eligible for funding at a 75% Federal share significantly dimishes the amount of averaging allowable under the Federal grant program.

- With a uniform grant share, a "stand-alone" grant program is inflexible in addressing financial "incapability" situations.

- Construction delays, red tape, program changes, and some "waiting in line" are endemic to any large Federal grant program.

Usefulness as a Component of the Transitional Program

Federal grants currently target funds for wastewater treatment and collection needs designated as priorities in national legislation and State priority lists. They have not, however, promoted local self-sufficiency, and may actually hinder the transition to State and local self-sufficiency. The history of program funding shows that Federal funding has provided some disincentive to direct State and local funding and program involvement. Nonetheless, the program is in place. In terms of leveraging of funds and the potential for targeting funds, administrative flexibility, and addressing financial capabilities, it provides a total framework for the construction of needed facilities. This program could be combined with new mechanisms that provide for enhanced State incentives and flexibility to promote long-term self-sufficiency and compliance.

CAPITALIZATION GRANTS FOR STATE REVOLVING FUNDS

Under this option, the Federal government offers "seed" grants to States with which to capitalize State Revolving Funds. The States lend the seed monies to local governments for wastewater treatment projects. States set the interest rates that the local governments will pay, as well as the maturities of the loans. The local governments repay the loans, and the States re-lend ("revolve") the repayments to other local governments in the form of additional loans for wastewater treatment projects (see Figure 5.1).

The monies given to States under this option are essentially "State monies" to be administered by States for dedicated wastewater treatment purposes. Conceptually, this option differs dramatically from the existing project grant approach, and is similar in many respects to predecessor Federal programs, such as block grants, revenue sharing and special revenue sharing, and the recent New Federalism proposals. As such, broad as opposed to detailed guidelines are attached to State administration of SRFs, and increased State responsibility and flexibility is encouraged wherever possible.

The monies in the State Revolving Funds (SRFs) will grow over time as a function of several factors: the interest rates charged to the local governments, the loan maturities, local defaults, and the interest rate earned from short-term investments of idle revolving funds. Greater interest rates, shorter maturities, and lower rates of default will capitalize the revolving fund at faster rates. Of course, a major factor affecting SRF capitalization is the amount of money dedicated or accepted into SRFs over time.

One variation of the capitalization grant option has State governments using the Federal seed monies as security for State bond issues that "leverage" additional monies for the revolving fund (See Figure 6.2). The Federal monies would be used to fund a debt service reserve fund for the State bond. This security would reduce the risk to the bond holders and, thus, help lower the interest costs that the State would have to pay.

Advantages

- Although it would take time to build up sufficient funds to finance all wastewater treatment costs through State Revolving Funds, once established, the revolving fund would provide a lasting source of State funds to provide for improved and sustained compliance. Thus, the long-term leveraging of limited Federal funds is significant.

- The predictability of revolving fund revenues increases the certainty of project funding, and allows States and local governments to plan over the long term. This provides an incentive for States to accept an active management role.

FIGURE 5.1 UNLEVERAGED STATE REVOLVING FUND

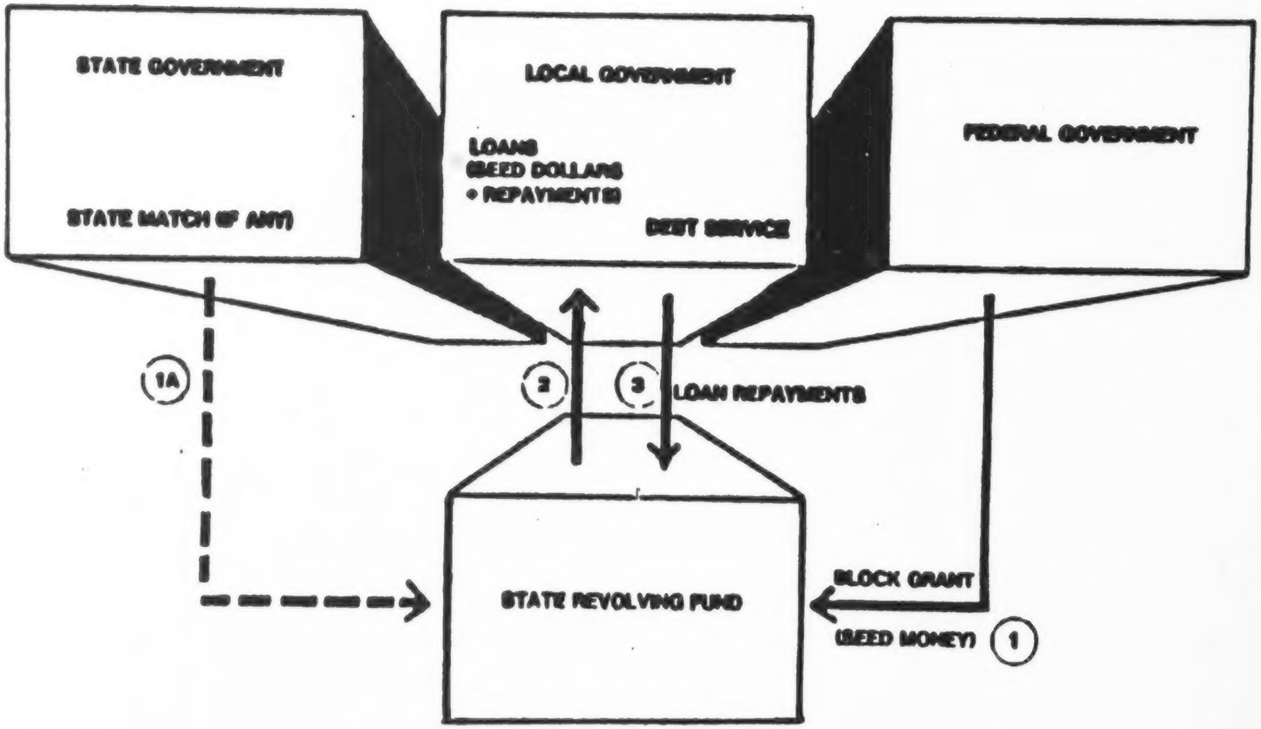
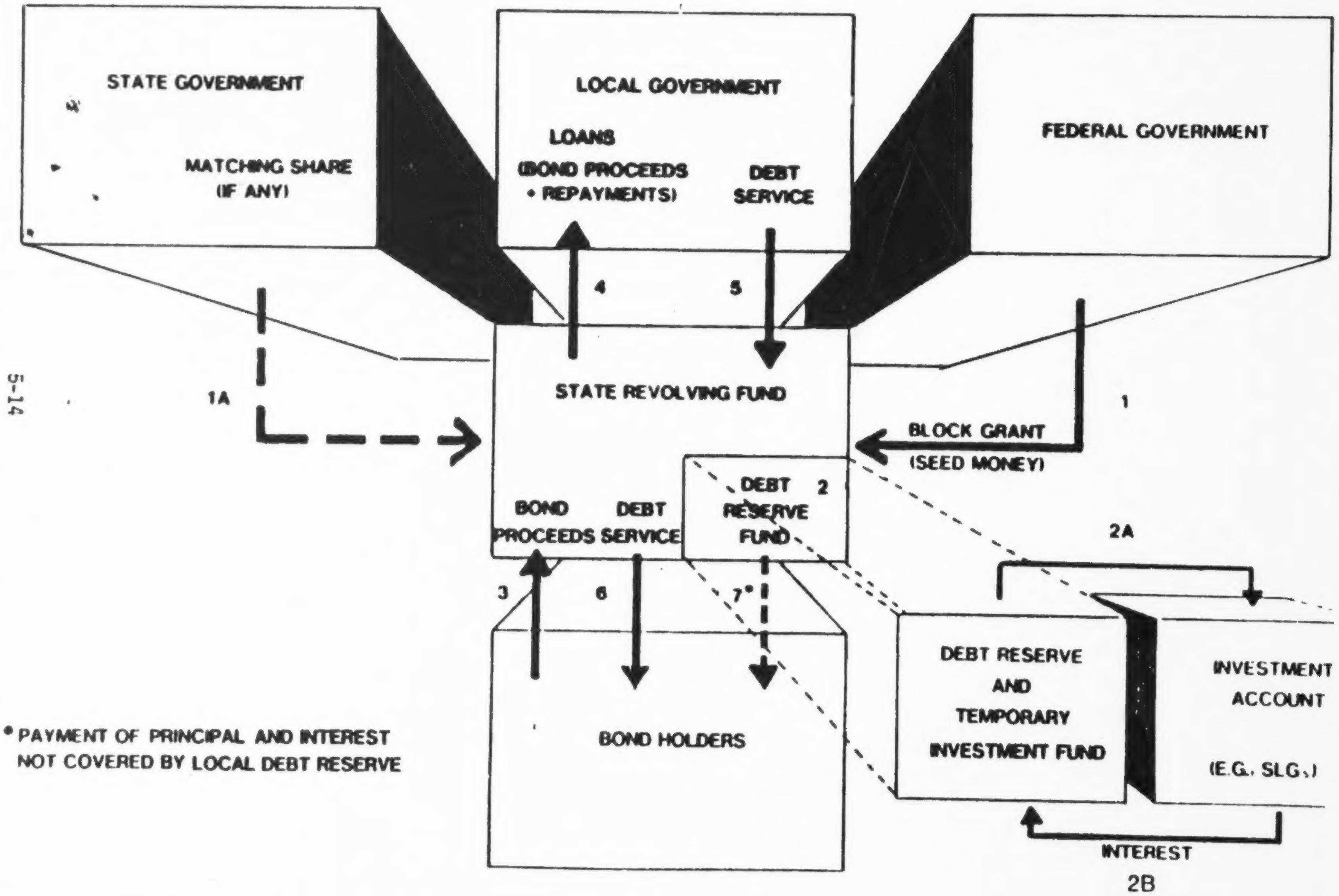

STATE GOVERNMENT
STATE MATCH (IF ANY)
LOCAL GOVERNMENT
LOANS
(SEED DOLLARS
+ REPAYMENTS)
DEBT SERVICE
FEDERAL GOVERNMENT
1A
2
3
LOAN REPAYMENTS
STATE REVOLVING FUND
BLOCK GRANT
(SEED MONEY)
1

FIGURE 5.2 LEVERAGED STATE REVOLVING FUND


STATE GOVERNMENT
MATCHING SHARE (IF ANY)
LOCAL GOVERNMENT
LOANS (BOND PROCEEDS + REPAYMENTS)
DEBT SERVICE
FEDERAL GOVERNMENT
4
5
1A
STATE REVOLVING FUND
1
BLOCK GRANT (SEED MONEY)
DEBT RESERVE FUND
2
BOND PROCEEDS
DEBT SERVICE
2A
3
6
7*
BOND HOLDERS
DEBT RESERVE AND TEMPORARY INVESTMENT FUND
INVESTMENT ACCOUNT
(E.G., SLG.)
INTEREST
2B

* PAYMENT OF PRINCIPAL AND INTEREST NOT COVERED BY LOCAL DEBT RESERVE

- Given certainty in funding and the potential for local refinancing in the future, local governments could proceed immediately with construction instead of waiting for outside financial assistance.

- States would be allowed greater latitude in the use of funds, and thus would have greater incentives and flexibility needed to promote long-term self-sufficiency in capital formation, operation and maintenance of facilities, and compliance.

- The growth of revolving fund revenues would enable States to address future wastewater treatment and collection needs.

- The State Revolving Fund concept provides for continued delegation of long-term program responsibility to States. It provides substantial administrative flexibility, such as leveraging, by issuing State bonds.

- The State Revolving Fund would provide States with the incentives and means to achieve long-term self-sufficiency, since it establishes a State-level source of funds that would be available in the future without Federal funding support.

Disadvantages

- In the short-term, the State Revolving Fund may not be as highly leveraged as a 55% Federal grant (i.e., it may result in a lesser dollar amount of construction), unless States supplement it with their own funds or use capitalization grants as security for State-issued bonds.

- Since one initial objective would be to quickly capitalize the revolving fund, it is likely that loans would be made to communities with adequate financial capability to quickly repay the loans. Thus, initially, communities with low financial capability may not receive funds for wastewater treatment. However, as the revolving fund grows, it is possible that special consideration can be given to communities with low capabilities.

- If inadequately capitalized, the revolving fund would provide limited repayments for future loans. The capitalization rate is highly dependent on the timing and the pace of State assumption of SRF responsibilities, and the amount of monies dedicated to SRF purposes. (See Figure 6.1).

- The administration of a revolving fund is complex, and requires additional financial expertise on the part of State officials.

Usefulness as a Component of the Transitional Program

The Federal capitalization grant and State Revolving Fund option could provide States with a growing, long-term source of funds that may be flexibly targeted to wastewater treatment projects. As such, this option would be an effective and feasible method of transition to State and local self-sufficiency.

SUMMARY OF MAJOR FUNDING OPTIONS AS A COMPONENT OF A TRANSITIONAL PROGRAM

Having analyzed the five funding options against the areas of consensus, the evaluation criteria, and undesirable features, it is clear that certain options do not adequately address the continuing and future transitional needs for adequate wastewater treatment. A tax-subsidized Federal or direct loan program, for example, encourages State/local dependency on Federal financial support as do Federally guaranteed municipal bonds. In addition, the concept of the Federal guarantee of tax-exempt debt is contrary to the policies of the Department of Treasury.

The 55% Federal share available under the grant program has limited use in the transition to State/local self-sufficiency. It does target funds to nationally designated needs, provides for greater dollar leverage than the aforementioned options, is familiar to all participants, and requires no major administrative changes. However, it does not score well in other areas. It neither promotes long-term capitalization of State programs nor State flexibility in addressing the varying needs of communities. Thus, it does not promote long-term self-sufficiency or provide incentives for long-term compliance in its current form. Nevertheless, the grant program offers an effective approach to providing for the construction of needed facilities.

The consensus opinion suggests a near-term mix of the current categorical grant program and a Capitalization Grant/State Revolving Fund concept, with a shift to the latter as quickly as possible. Once established, the Funds would provide a lasting source of monies to States and communities in meeting wastewater treatment needs for the greatest leverage per Federal dollar. Thus, they would provide for a gradual transition to ultimate State/local self-sufficiency. State governments, by using the Federal grants as security for bond issues, could leverage additional monies for the revolving fund through traditional long-term bond issues. Capitalization Grants would be used to fund a debt service reserve fund for State bonds, reducing bond holder risk and interest costs to States. In addition, municipalities could be encouraged to supplement these programs with local financing options, with the possibility of obtaining refinancing from the State Revolving Fund in the future.

CHAPTER 6: OVERVIEW OF A TRANSITIONAL FEDERAL PROGRAM

The State Revolving Fund concept described in Chapter 5 offers the most effective and feasible approach to managing the continued transition to State and local self-sufficiency. Structured to provide States with the funds, incentives and flexibility needed to permit improved and continued compliance, it will provide the best financial means to meet the short-and long-term water quality goals of the Clean Water Act. Specifically, it provides for:

- Short-term leveraging of limited Federal funds,
- Incentives for States
- Transfer of an active management and financial role to States
- Long-term State capital accrual that can be flexibly targeted to wastewater treatment needs now and in the future.

The recommended transitional SRF program is consistent with the goals of the 1977 and 1981 Amendments to the CWA. It also addresses the eight areas of consensus goals (described in Chapter 2) that emerged from the diverse array of experts that had input into the study. It is consistent with a trend towards "New Federalism," giving States and localities increased independence in fulfilling their obligations. Given current economic, political and programmatic realities, no stand-alone grant, bond or loan program can offer all these opportunities.

This chapter presents key elements of a transitional Federal program employing the State Revolving Fund concept. The transition provides States with a choice: whether to pursue the SRF option, to retain the current project grant program, or adopt a mix of the two. However, it also provides a clear signal of the end of direct Federal funding as of FY 1995, and encourages States to implement those mechanisms which best provide for the continuity of programs into the future.

Specifically, the option is designed to achieve the following objectives:

- To encourage full State participation in the SRF program as quickly as possible, but allow States in the pace and scope of SRF assumption and maximum flexibility in tailoring programs to their own needs
- To phase-out Federal funding over a ten year period (1985-1994) as SRFs become more viable as sources of funding
- To assure local governments of the availability, timing and amount of State and Federal funding during the transitional period

- To ensure that Federal funds are being directed to completion of needed treatment-related projects

The sections that follow provide details on each element of the SRF concept:

- Funding levels and commitment
- State choices
- State assurances to local governments
- State assurances to the Federal government
- Conditions and options for operating SRFs
- Local assurances to the SRF
- Audits
- EPA Task Force recommendations and plans for implementation

FUNDING LEVELS AND COMMITMENTS

The transitional program would be subject to some of the same fiscal constraints as the current project grant program, including the budgetary process that requires authorizations and appropriations. While authorizations may provide a basis for predicting future levels of funding, from the State and local perspective it is only the actual appropriated funds that count. Uncertainty about future funding can cause delays in a program, and that uncertainty can be significantly increased if appropriated funds are consistently below authorized levels. For this reason, authorization levels should be set so that there is a reasonably high expectation that the full amount can be appropriated. Experience with the program in the late 1970's indicates that high authorizations by no means assure high future appropriations, and may introduce uncertainty about the future levels of funds.

Proposed Authorizations

Based on the above considerations, an initial authorization period could be for five years, FY 1986-FY 1990, at the current level of $2.4 billion per year. Such amounts and timing would be consistent with the consensus at the time of the 1981 Amendments and planning figures contained in the President's FY 1985 Budget. In addition, an annual authorization of $2.4 billion may be considered a realistic level for obtaining full appropriations.

A second authorization period of four years (FY 1991-1994) could provide an additional $2.4 billion for the first year, with $1.8 billion, $1.2 billion and $0.6 billion available for FY 1992, 1993, and 1994, respectively. In 1989, prior to the final authorization, EPA should conduct a study assessing the status of municipal compliance and implementation of the SRF program in States.

Commitments Beyond FY 1990

It is important to provide a clear signal of the authorizations that could be expected beyond the initial authorization period. Thus, the legislative proposal should contain a policy statement, including a notice of intent, to continue the program to, but not beyond FY 1994, with a gradual phase-out at the end (see Table 6.1). Future authorization planning figures could be cited in legislative guidance to States on factors to take into account in designing their project priority lists for the period FY 1990-1994.

Allotment Formula

The allotment of appropriated funds would be made among the States in accordance with the prevailing allotment formula provided by law. To encourage stability and certainty in the program, it is recommended that the allotment formula be fixed at the beginning of the authorization period and continue the existing formula.

TABLE 6.1 POSSIBLE FEDERAL FUNDING LEVELS AND THEIR USE

	Fiscal Year	Authorizations & Appropriations	Project Grants**	Capitalization Grants**	
			ILLUSTRATIVE EXAMPLE		
10 Years at Annual Funding Levels Set Forth in the 1981 Amendments	1982	$2.4	$2.4	$0.0	1981 Authorization
	1983	$2.4	$2.4	$0.0	
	1984	$2.4	$2.4	$0.0	
	1985	$2.4	$2.4	$0.0	
	1986	$2.4	$2.4	$0.0	Next Authorization
	1987	$2.4	$1.8	$0.6	
	1988	$2.4	$1.2	$1.2	
	1989	$2.4	$0.6	$1.8	
	1990	$2.4	$0.0	$2.4	
3-Year Transition Phase-out	1991	$2.4	$0.0	$2.4	Final Authorization
	1992	$1.8	$0.0	$1.8	
	1993	$1.2	$0.0	$1.2	
	1994	$0.6	$0.0	$0.6	
	1995	$0.0	$0.0	$0.0	
	TOTALS	$27.6*	$15.6**	$12.0**	

* Total reflects all projected total Federal authorizations and appropriations, FY 1982-1994. (Actual totals would be subject to authorization and appropriation by Congress and the President.)

**Illustrative example of how States might phase-in loan programs under State Revolving Fund option.

Dedicated Funds

As defined more fully below, State Revolving Funds must be dedicated to wastewater treatment purposes as prescribed in Section 212 of the Clean Water Act.

STATE CHOICES: PROJECT GRANTS VS. CAPITALIZATION OF STATE REVOLVING FUNDS

Types and Timing State Decisions

Beginning in FY 1986, each State would have a choice of whether to use its allotment for project grants as currently provided, or whether to accept all (or a portion) of its allotment as a State Capitalization Grant for establishing a State Revolving Fund. The choice to establish a State Revolving Fund would be left entirely to each State. However, three months prior to the beginning of each fiscal year, any State intending to use all or a portion of its allotment as a State Capitalization Grant would need to inform EPA of its decision regarding the mix of State Capitalization Grants and project grants.

Project Grants: Some Choices

A State choosing to continue total participation in the existing project grant program would remain subject to current program law and regulations. If a portion of the State's allotment were used for SRF purposes, the project grant funds would still be subject to all Title II requirements.

State Capitalization Grants

If a State Revolving Fund is established that conforms to the limited Federal requirements (see especially the discussion of environmental results assurances and audits below), a State could use all or a portion of its allotment as a State Capitalization Grant. A State Capitalization Grant would comprise an obligation of the Federal government to disburse funds directly from the U.S. Treasury to the appropriate SRF account. The obligation of funds would occur once a State had notified EPA of its decision, negotiated a grant agreement, and once appropriated funds had become available for obligation by the Administrator. To reduce the magnitude of temporary increases in Federal payments (outlay "bulges"), the payments could be made to the SRFs in equal installments over a period of eight (8) quarters.

Treatment of Set-Asides

If a State chooses to exercise its option of using a portion of the allotment as a State Capitalization Grant, all existing set-asides, with the exception of State Management Assistance Grants (205(g)) and Water Quality Management Planning Grants (205(j)), would only be applicable to the project grant portion of a State's allotment. To encourage State participation in the SRF concept, Section 205(g) and 205(j) monies could continue to be set-aside "off the top" of the total State allotment. The former could be used for State SRF administrative costs, while the latter could be discretionary.

Timing and Amount of Capitalization of State Revolving Funds

The earlier a State establishes a revolving fund the greater the leverage per dollar. Figure 6.1 portrays the effect of various SRF start dates on the amount of funds available in the SRF by the beginning of 1995. The relationship between the year a SRF is established and the end of period funds is shown for two interest rates, 2% and 4%. Assumptions include: a constant interest rate; $1 added to the SRF each year at the beginning of the year (1986-1991); $0.75 added at the beginning of 1992; $0.50 added at the beginning of 1993; $0.25 added at the beginning of 1994; all funds (including accumulated interest are loaned immediately in the beginning of each year; no additional funds are added after 1994 (when Federal funds are proposed to be terminated); and interest on the loan is accrued for the entire year and paid at the beginning of the next year. The decrease in Federal funds (beginning in 1992) is made to reflect the phase-out in the level of Federal funding planned. As these figures demonstrate, the earlier a SRF is established, the greater the size of the fund by 1995. In addition, a State can increase leveraging in the short-term if they supplement the SRF with their own funds or use capitalization grants as security for State-issued bonds.

Bonus for Establishment of State Revolving Funds

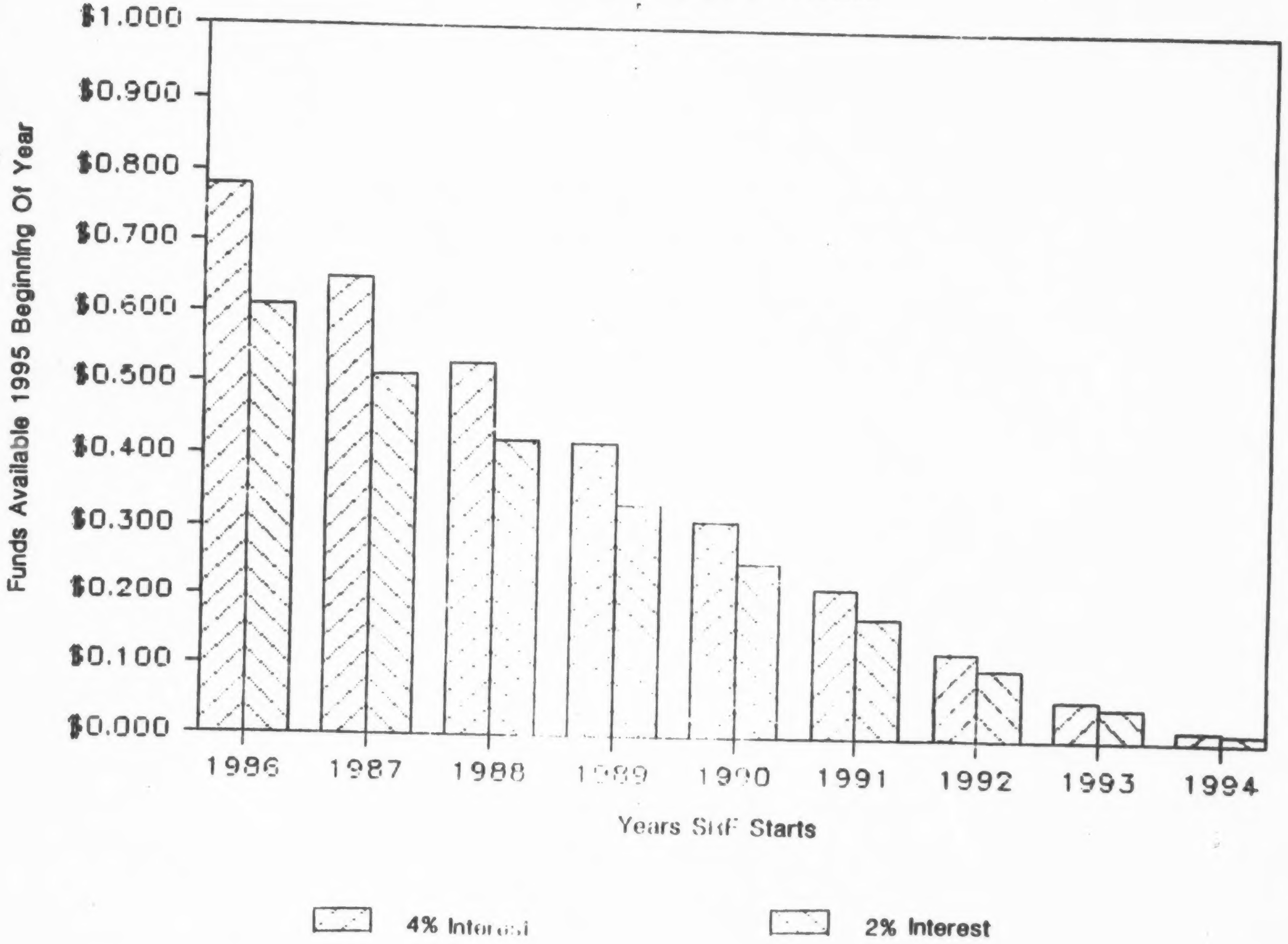
To encourage the early creation of State Revolving Funds, financial rewards could be built into the program so that States proceeding with SRFs received additional funds from within a given year's appropriation. Under such an incentive program, a specific portion of the appropriation (e.g., 10%) could be set aside for making bonus payments to those States that had established SRFs. Since it may take States two years to pass enabling legislation to establish SRFs, the bonus program could begin in FY 1988, and might be increased over time (e.g., up to 25%). Provisions should provide a "cap" on the bonus any single State could receive. Unused bonus money should be carried over into the next year's "bonus pool."

State Matching Contributions

To ensure adequate capitalization of SRFs, another option could be to encourage a State matching contribution to a SRF. In H.R. 3282 (98th Congress) a mandatory State match of 20% was required. A State matching contribution would certainly help a State meet its environ- mental results assurances as well as fund its non-core treatment needs, especially in the start-up years. Over time, State contributions would increase the rate of SRF capitalization and, thus, help prevent under-capitalization. However, these objectives need to be balanced with a State's willingness and capability to adopt the SRF concept in the first place.

FIGURE 6.1 AVAILABLE FUNDS IN SRF, BEGINNING OF YEAR 1995

With Variable Start Dates



STATE ASSURANCES TO LOCAL GOVERNMENTS

EPA's 1984 National Municipal Policy requires that municipal wastewater treatment facilities be brought into compliance with the enforceable requirements of the Act by July 1, 1988. It also requires that facilities in need of construction to comply with these standards make arrangements for financing that construction, regardless of the availability of outside funding. The National Municipal Policy, in its guidance on State Strategies and Municipal Compliance Plans, suggests a designation of such facilities as either "fundable" or "unfundable" in terms of outside funding. Many of the facilities requiring construction to comply with these requirements are expected to fall into the category of unfundable prior to 1988.

Refinancing Option Under the State Revolving Fund

The SRF concept offers the opportunity for municipalities to proceed with early construction of needed facilities using their own financial resources, without sacrificing the possibility of receiving some outside financial assistance for the project at a later date. Based on the existing but revised mechanism of the State Project Priority Lists (see below), communities would be informed as to whether their projects were considered fundable or unfundable, and when such assistance might be made available. Under the SRF option, projects designated as unfundable prior to 1988 could be financed by the local community from short-term local debt, with the prospect of refinancing that debt with a loan from the SRF once loan funds became available. The priority list--based on planning figures for Federal appropriations, State contributions and repayment of loans to the SRF--would indicate the length of time that might elapse before refinancing could be achieved.

The refinancing option hinges on the States' ability to provide adequate assurances that future loan monies will be available. Although this requires that States be certain of the availability of Federal funds, the degree of certainty over future funding will become increasingly dependent on a State's utilization of repayments to the SRF. If States properly manage their SRFs, local communities may be able to act on the "green light" of future funding, and provide for needed treatment works as quickly as possible through their own short-term resources.

Use of a State Financing Plan as an Assurance Mechanism

To provide each locality facing enforceable NPDES permit requirements with some certainty regarding the availability of funding, State Project Priority Lists could be modified by adding all municipal wastewater treatment projects (including those not otherwise contained on existing lists) that require construction to comply with applicable requirements. For such projects, as well as all other projects regularly on the priority lists, each State would identify those projected to receive funding. The form of the funding (grant vs. loan), and timing of monies for each project would be determined based on the following planning figures:

- Federal appropriations for FY 1982 through FY 1994 in the amount of $27.6 billion, available as either grants or loans or both beginning FY 1986
- The State's estimate of any State contributions it would make to the SRF during the period FY 1986-1994
- The State's estimate of the annual amounts of loan repayments to the SRF during the period FY 1986-1994
- The State's estimate of the amount of the proceeds from any water pollution control bonds that would be issued by the State for deposit in the SRF during the period FY 1986-1994

Such a State Financing Plan would include all project grant awards and loan commitments for the period FY 1986 through 1994. The plan would also designate as unfundable any project requiring construction to meet enforceable requirements that would not receive grant or loan funding prior to a given fiscal year. Projects expected to receive a grant award or loan commitment would need to be identified on the State Project Priority List with at least the following information:

- The total eligible wastewater treatment project cost
- The total eligible Category I, II, IIIA, IVB project costs
- The projected date of the grant award or loan commitment
- The dollar amount and Federal share of the grant award, or the dollar amount, interest rate and maturity period of the loan commitment

If a State opted to use 100% of its allotment as a State Capitalization Grant, the State decisions on the selection of fundable projects would be controlled by State law and procedures governing the appropriation of State revenues. In addition, State governments would be required to hold public hearings on their decisions on the use of allotments as grants/loans, with timely prior notification of, and consultation with, all local jurisdictions that are potential recipients of Federal funds. If a portion of the allotment is used for Title II grants, then the existing regulatory requirements applying to the State Project Priority List would also be applicable.

STATE ASSURANCES TO THE FEDERAL GOVERNMENT: MANAGING FOR ENVIRONMENTAL RESULTS

Need for Results-Oriented Program Requirements

Since the needs of States and local communities are so diverse both in terms of wastewater treatment and financial needs, maximum flexibility must be provided in deciding how to structure and use Federal funds during any transitional program. Since State and local governments are in a better position to make more informed decisions on how to achieve a balance between State and local issues than the Federal government, flexibility during a transitional period is not only appropriate, but desirable.

However, in providing such flexibility, there is also a potential conflict with the goal of meeting the enforceable requirements and deadlines of the Clean Water Act--i.e., those relating to the imminent, needed construction of core treatment projects. The transitional funding concept must therefore provide some assurance that improved compliance will result from Federal expenditures. Thus, the Federal interest during a transition period will drive the program to focus not only on protecting against waste, fraud, and abuse through minimal audit requirements, but also on obtaining assurances that needed environmental results will be achieved.

To assure that the transition is managed for environmental results, and does not needlessly intrude on State decision-making, a program performance standard could be used. A results-oriented goal would be set for a State program to attain--for example, the award of at least 'x' dollars to core treatment-related projects within a two year period. Under such results-oriented program requirements, a State would be allowed maximum flexibility in choosing how to meet the performance standards. A State would only be penalized if the desired level of performance had not been attained. In setting results-oriented standards for a transitional program, consideration must be given to the fact that while the SRF concept offers the best means for long-term capitalization of State programs, in the short-term, the SRF may not result in the maximum leveraging of Federal dollars since 100% SRF loans may result in less dollars of construction than 55% Federal grants.

Thus, this results-oriented strategy should be designed to maintain progress in buying out core eligible needs at a rate comparable to that which might occur in the short-term under the grants program, at the same time as allowing States flexibility and opportunities for long-term leveraging. It is proposed that a State opting to accept a State Capitalization Grant must commit to target funds in such a way that the core eligible amount of construction (Categories I, II, IIIA, IVB backlog needs) and CSOs authorized under Section 201(n) will be an amount equal to at least 100% of the State Capitalization Grant.

This 100% assurance to buy out core eligible treatment needs should not be difficult to meet. If a State elects to take any of its allotment for SRF purposes and loans the money only for core eligible treatment needs, the 100%

assurance is automatically achieved. Of course, loans made for core eligible treatment projects for less than full project costs (e.g., 60%-90%) would increase the leveraging and the environmental assurance level met.

State Certification of Assurance

Each State moving into the SRF program would be required to certify that they intended to meet the 100% assurance level, and indicate the manner in which they expected to do so. The basis for these assurances would be the submission of the State Project Priority Lists to EPA. Such lists would contain all projects requiring construction to comply with the enforceable requirements of the Act (core eligible projects by definition), all projected project grant awards, and all projected loan commitments.

The State Project Priority List could also contain information on the costs of the total eligible project costs in Categories I, II, IIIA, and IVB. (This information is already provided on State Priority Lists.) The Project Priority List information could thus be the basis for assessing the State's certification. Each State would then have two years within which to make good on its assurances that the total core eligible project costs resulting from SRF construction loan commitments would equal or exceed 100% of the State's total payments of Capitalization Grants.

EPA Review for Compliance

Prior to the completion of a grant agreement for any given fiscal year, EPA could review the State's Financing Plan, State Project Priority List (or other appropriate State certifications of assurance). If EPA determined that the assurances were inadequate, EPA could withhold award of a State Capitalization grant to an SRF.

Within the two year performance period, a State would be required to complete loan commitments needed to attain the required performance assurance level. As proof of attainment, a State would submit to EPA a list of the funded projects at the end of two years. If the EPA review of the funded list indicated that required performance assurance levels had not been attained, then subsequent disbursements of State Capitalization Grant monies would be withheld up to an amount equal to the difference between the funded level and the assurance level. Such withheld funds would be subject to reallotment among other States.

CONDITIONS AND OPTIONS FOR OPERATING STATE REVOLVING FUNDS

General Rules

In designing their SRFs, States could be allowed considerable flexibility and discretion. Although SRFs would have to be structured to conform to generally accepted principles of accounting practice and thus be amenable to annual audits, States could manage the SRF in a number of ways. Such management, however, would be governed by several overriding rules:

(1) All SRF disbursements would have to be made for the purposes of supporting municipal wastewater treatment facilities (as defined in Section 212 of the Clean Water Act).

(2) All payments of principal and interest on SRF loans would be "proprietary receipts" of the SRF and would have to be repaid to the SRF.

(3) Federal monies (State Capitalization Grants) could only be used as loans (or as security for State bond issues, the proceeds of which would be used for direct loans).

(4) While Federal funds were used to support SRF activities, States would have to make assurances as to the level of environmental results to be obtained by the use of the State's allotment.

In addition to these general conditions, the operations of the SRF would be governed by the specific conditions and options discussed below.

Operating Strategies

The amount of funds available to the SRF would be dependent on the choice of operating techniques for the SRF:

- unleveraged (with or without a State appropriation to the fund)

- leveraged (with or without a State contribution)

In the unleveraged mode (both with and without a State contribution), the State Capitalization Grants (and any State appropriation to the fund) could be used to make an initial series of loans. As repayments began to trickle back to the SRF, the amount of funds available to the SRF would steadily increase. Although slower in start-up, the unleveraged option would provide opportunities for significant capital growth over a long period of time.

In the leveraged mode, funds for the initial series of loans would be obtained from the proceeds of a State bonds issue, which would be secured by a SRF reserve account established with State Capitalization Grants or State monies. If properly managed, leveraging on the order of two to five times the amount

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of the reserve account could be obtained. Although significant sums could be generated initially (which might be an appropriate strategy for moving as many projects as possible at once), if debt service payments to the bondholders claimed all or most of subsequent local loan repayments, then the capital growth of the SRF would be limited.

Any of these operating strategies would be permissible provided that the SRF satisfied the 100% environmental results assurances and annual audit requirements (see below).

Delivery Systems and Allowable Disbursements

The SRF concept requires that loans and loan repayments to the SRF be made, so that a source of return revenue--the revolving feature--will result in increasing capital accrual. Loans from a State Revolving Fund can be designed to provide a smaller local debt service than if financing is procured directly through the bond market. Table 6.2 shows the reduction in debt service (or grant equivalency) of a SRF loan provided at a given interest rate over a 20-year repayment period as compared to the cost of financing through the traditional bond market. For example, if a local government receives a 2% SRF loan rather than procuring needed funds through local bond issues (carrying a 10% interest rate), the SRF loan would be equivalent to a 48% grant.

In the discussion that follows, "first cycle" refers to SRF disbursements made with the State Capitalization Grant. "Second cycle" refers to SRF disbursements made from loan repayment monies.

First Cycle of SRF Funding

In the first cycle of funding (i.e., those involving a Federal investment), State Capitalization Grants could be restricted to two uses: (1) loans (unleveraged operations), or (2) as security for State debt that is used to make loans (leveraged operation). The following eligibilities and conditions would apply in the first cycle of funding:

- Loans could be made to any municipal water pollution control project within the definition of Section 212 of the Act, although the total project construction resulting from the combined State program of grants and SRF loans would have to meet the required environmental results assurances.

- SRF financing could be used to refinance 100% of locally funded projects.

- SRF financing could be used for planning and design work, although such loans would not count towards environmental results assurances.

TABLE 6.2 GRANT EQUIVALENCE OF SRF LOAN AT CERTAIN INTEREST RATES

SRF INTEREST RATE	INTEREST RATE FROM BOND MARKET												
	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%
0%	0%	10%	18%	26%	32%	38%	43%	47%	51%	54%	57%	60%	63%
1%	-	0%	9%	18%	25%	31%	36%	41%	46%	49%	53%	56%	59%
2%	-	-	0%	9%	17%	24%	30%	35%	40%	44%	48%	51%	54%
3%	-	-	-	0%	9%	16%	23%	29%	34%	39%	43%	46%	50%
4%	-	-	-	-	0%	8%	16%	22%	28%	33%	37%	41%	45%
5%	-	-	-	-	-	0%	8%	15%	21%	27%	32%	36%	40%
6%	-	-	-	-	-	-	0%	8%	14%	20%	26%	31%	35%
7%	-	-	-	-	-	-	-	0%	7%	14%	20%	25%	29%
8%	-	-	-	-	-	-	-	-	0%	7%	13%	19%	24%
9%	-	-	-	-	-	-	-	-	-	0%	7%	13%	18%
10%	-	-	-	-	-	-	-	-	-	-	0%	6%	12%
11%	-	-	-	-	-	-	-	-	-	-	-	0%	6%
12%	-	-	-	-	-	-	-	-	-	-	-	-	0%

ASSUMPTIONS:

- Project would have been 100% grant/loan eligible
- Loan is for 100% of project costs
- Loan maturity is 20 years with level debt service

During the first cycle, the State would be provided with complete flexibility and discretion in:

- Selecting the recipients of loans and the type of projects assisted (within the definition of Section 212 of the Act and required environmental results assurances)
- Determining the amount of the loan and the portion of the project costs to be covered by the loan
- Setting the interest rate that would apply to each SRF loan
- Setting the loan maturities, although the term of the loan should not be greater than the design life of the project, e.g., 20 years.

Second Cycle of Funding

Once a SRF had established an adequate stream of return revenue from its portfolio of outstanding loans, the SRF could have increased flexibility in the choice of how funds would be delivered to municipal wastewater treatment projects. Thus, States might want to have an option of disbursing some of the second cycle return revenues to the SRF through other mechanisms: interest subsidies, payments for the purchase of bond insurance, guarantees for locally issued debt, or grants. Unlike loans, however, none of these mechanisms would result in helping to establish a self-sustaining SRF.

A State could also have total flexibility in using second cycle monies to fund any project within the scope of Section 212, including non-core projects and projects currently ineligible for Federal assistance. That is, the 100% environmental results assurance does not apply to return revenues. Such fundable projects include combined sewer overflow correction, non-treatment related pipe projects, plant rehabilitation, replacement and reconstruction, the treatment of discharges from separate storm sewers, and minor replacements.

Since return revenues from loan repayments would be projected twenty years or more into the future, States could consider assessing the possibility of using such funds to refinance local projects that were started in advance of the availability of any SRF loans.

Applicability of Title II and Other Federal Requirements

Because the SRF concept is fundamentally and philosophically different from project grants, and to encourage State and local participation in the SRF concept, the Federal government will not require that Title II requirements and most other Federal laws apply to projects receiving financial assistance from SRFs. To ensure proper management, overall SRF requirements (such as use of State priority lists, audits, environmental assurances) would be applicable, but kept to a minimum.

LOCAL ASSURANCES TO THE STATE REVOLVING FUND

In order to assure the solvency of the SRF, States should take care that the loans are sound, and that all loans made by the SRF be backed by dedicated sources of local revenue sufficient to pay all principal and interest payments required. Commonly, such security is provided by local governments in the form of a bond, note or agreement pledging user fees or some other form of local revenue towards repayment of the loan.

State Revolving Funds obtaining adequate dedications of funds from local communities would enhance the leveraging potential of the SRF since State bond issues could be secured with such known revenue streams. Under existing and proposed State programs, some States have been able to insert protective measures in the loan agreements that would allow States to intercept State (or other) aid that would otherwise have gone to the community that is in default. For example, General Revenue Sharing payments to a local government could be pledged by that government as payment to the SRF in the event other pledged revenues (e.g., user fees) were insufficient to meet the principal and interest on an outstanding SRF loan.

AUDITS

Each State receiving a State Capitalization Grant would have, in accordance with OMB Circular A-102 (Attachment P), an independent annual audit of its accounts and financial statements. To ensure full accountability of Federal Funds, each State would have to deposit its State Capitalization Grant in a special SRF Federal funds account and maintain an audit trail of all expenditures financed--directly or indirectly--by those receipts. Where Federal funds were co-mingled with State and other funds, the audit requirements would have to ensure that all expenditures from that account were accounted for and audited as if they were Federal funds. Audits on Federal funds or accounts containing Federal funds would be conducted in accordance with the auditing procedures of the General Accounting Office (GAO).

A Federal audit of the local projects funded by the SRF would not be required. Although each project would be required to maintain an audit trail capable of allowing audits in accordance with GAO procedures, the management and oversight of the program would be left essentially to the States. States would be free to impose any audit requirements that it deemed necessary to ensure appropriate use of loan monies from the SRF. Where waste, fraud, or abuse was suspected, the Criminal Code of the United States (Title 18, U.S.C.) would be applicable to criminal offenses relating to the expenditure, accounting, and auditing of such funds by a State or local government.

Each State would be responsible for making a full and complete annual report on the SRF and its expenditures, and having an independent review and audit conducted. Such reports would need to provide certification that the conditions of the State Capitalization Grant had been satisfied, e.g., that treatment facilities or that environmental results assurances had been attained. Table 6.3 provides an example of how State Revolving Funds might be structured to allow proper accounting of receipts and expenditures.

TABLE 6.3 STATE REVOLVING FUND ACCOUNTS

ACCOUNT NAME	ALLOWABLE RECEIPTS (Payments to Accounts)	EXPENDITURES (Payments from Accounts)
Federal Funds	(1) State capitalization grant disbursements from the U.S. Treasury	(1) Loanable Funds Accounts (2) Debt Service-Reserve Accounts
Loanable Funds	(1) Federal Funds Account (2) Loan Repayments Account (3) Bond Proceeds Account (4) State Contributions Account (5) Temporary Investment Account	(1) Direct loans for construction of municipal wastewater treatment facilities meeting the definition of Section 212 of the Act, where the loan recipient has pledged a dedicated source of revenue in the form of a bond, note or other agreement for repayment of the loan to the Loan Repayments Account of the SRF
Loan Repayments	(1) Local government sources of revenue covering the principle and interest on loans made by the SRF	(1) Loanable Funds Account (2) Debt Service Account (3) State Administrative Expenses Account (4) Miscellaneous Expenditures Account
Bond Proceeds	(1) The proceeds from any sale of a bond secured in whole or in part by State capitalization grant funds deposited in a Debt Service-Reserve Accounts (2) The proceeds of any bond sale secured by the Debt Service-Reserve Account or by dedication of revenues from outstanding SRF loans	(1) Loanable Funds Account (2) Reasonable payments to Debt Service-Reserve Account

TABLE 6.3 STATE REVOLVING FUND ACCOUNTS (Continued)

ACCOUNT NAME	ALLOWABLE RECEIPTS (Payments to Account)	EXPENDITURES (Payments from Acounts)
Debt Service	(1) Loan Repayments Accounts of revenue dedicated to debt service on State bonds (2) Debt Service-Reserve Accounts if dedicated local repayments prove insufficient (3) State Contribution Account	(1) Payments of principle and interest to bondholders of State-issued debt; the proceeds of which were used to make SRF loans
Debt Service-Reserve	(1) Federal Funds Account, if bond proceeds have been deposited in Loanable Funds Accounts (2) Reasonable portions of bond proceeds from Bond Proceeds Accounts (3) Interest earned in Temporary Investment Accounts	(1) Debt Service Accounts to rover the debt to bond holders when dedicated local repayments of loans prove insufficient (2) Temporary Investment Accounts (3) Loanable Funds Accounts, if State debt has been retired, or if Debt Service-Reserve accounts exceed debt service coverage requirements

TABLE 6.3 STATE REVOLVING FUND ACCOUNTS (Continued)

ACCOUNT NAME	ALLOWABLE RECEIPTS (Payments to Accounts)	EXPENDITURES (Payments from Accounts)
State Contributions	(1) Any State appropriations to the SRF	(1) Any SRF Account
State Administrative Expenses	(1) Loan Repayments Account (2) State Contributions Account	(1) Administrative expenses incurred by the State in operating the SRF
Miscellaneous Expenditures	(1) Loan Repayments Account (2) State Contributions Account	(1) the purchase of bond insurance for State-issued or locally-issued debt that supports construction of municipal wastewater treatment projects (2) interest subsidies on local debt issued to construct municipal wastewater treatment facilities
Temporary Investment Account*		

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*For each account in the SRF, temporarily idle funds (such as reserve accounts) may be invested at rates that protect the value of the funds, provided that such investments of SRF funds comply fully with arbitrage and other requirements of the IRS Code and applicable tax laws.

Cost of Lost Taxation

In the private financing options, the tax benefits allowed represent a cost to the U.S. Treasury (relative to public financing with no tax benefits). Tax benefits can also be passed on to the municipality in terms of lower service charges. The cost to the Treasury is calculated as:

Cost of Lost Taxation = (Income before taxes x marginal tax bracket) + investment tax credit (if eligible)

The present value is calculated for the stream of projected tax losses over the financing term. This approach assumes that the private company or investor will have sufficient income to use all tax benefits in the year incurred. Carryback and carryfoward of taxes for use against taxable income in other years is not considered.

Cost of Tax-Exempt Financing

The cost of tax-exempt financing is calculated for financing with municipal bonds and IDBs. The approach assumes that the project is financed at tax-exempt interest rates where it would otherwise be financed at commercial taxable rates. The method used in estimation is based on that used by the U.S. Treasury.[1] The calculation equation follows:

Cost to Treasury = $t_r * i_t * P$

where: $t_r = (i_t - i_e)/i_t$

and

t_r = marginal tax rate of investors switching from taxable to tax-exempt bonds

i_t = taxable interest rate of bonds

i_e = tax-exempt interest rate of bonds

P = principal of loans outstanding

This cost is calculated in the model annually over the financing term and on a present value basis.

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[1] Modelling Revenue and Allocation Effects of the Use of Tax-Exempt Bonds for Private Purposes, Department of Treasury, OTA Paper 44, December 1980.

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EPA TASK FORCE RECOMMENDATIONS AND PLANS FOR IMPLEMENTATION

New Federal and State legislation will be required to implement of the State Revolving Loan concept. With the current Federal construction grants program authorization expiring at the end of FY 1985, now is the time to prepare additional and detailed revisions to the Clean Water Act. These revisions should authorize a transition from traditional project grants to Capitalization Grants for State Revolving Funds, from which loans for municipal wastewater treatment can be made. Federal legislation should reflect the consensus reached among various groups that funding goals include:

- Returning fiscal responsibility for wastewater facility construction to States and localities.
- Ensuring continued and certain Federal support through a defined time period.
- Meeting core treatment needs first.
- Increasing State management responsibility.
- Providing for funding mechanisms that ensure short- and long-term leveraging of funds.

New legislation should be structured (through the provision of both broad and specific incentives) to encourage full State participation in the Capitalization Grant/State Revolving Fund program as soon as possible. Although flexibility in the timing, pace and scope of State assumption of SRF responsibilities should be provided, and States should be encouraged to tailor their Funds to meet their particular needs, adequate long-term capitalization of Funds is necessary to prepare effectively for the future. Federal legislation should also provide for broad SRF auditing and accountability procedures.

Federal initiatives pertaining to the current construction grant program might also be needed to remove specific obstacles to prompt State movement into the proposed SRF program. While the independence provided to States establishing SRFs represents a fundamental and philosophical change from the traditional Federal project grant program, some changes in Title II requirements for project grants might be made. For example, EPA Task Force members noted that pressure for second-round grants (i.e., grants to communities that have already received a grant) could prevent a smooth transition to ultimate State and local self-sufficiency. In addition, EPA Task Force members examined a number of changes in the current Title II mandatory set-aside programs.

Finally, a large number of 75% Federal-share grants for eligible phased/segmented projects might limit the potential leveraging of Federal construction grants, create pressures for continuation of the project grant program, and slow the pace of State assumption of SRF responsibilities and long-term SRF capitalization.

Improved compliance and operations and maintenance (O&M) received special EPA Task Force attention towards the close of the study. Consensus centered on the fact that implementation of EPA's 1984 National Municipal Policy, strong enforcement strategies, and the opportunities to increase the pace of construction in the short-term provided by the SRF approach, were key to improving local compliance rates and, thereby, O&M as well. Specifically, the Task Force noted that while the primary responsibility for O&M remains with local governments, renewed Federal and State attention to improving O&M might be necessary. For example, several financial incentive programs (such as capital bonuses to States with good compliance rates, and special awards for effective and innovative O&M programs) were discussed. Other opportunities to focus on O&M might also be provided through the new first year performance certification requirements, Federal and State operator training programs, State priority lists and NPDES permits, and through private contract operations and other local programs.

The Task Force concluded its work by emphasizing that States would need adequate time, special enabling legislation, and perhaps constitutional amendments to establish SRFs with effective financial and administrative capabilities. Moreover, a smooth transition calls for a clear understanding of the new roles and responsibilities by all participants. EPA cannot simply transfer program functions to State and local authorities. It must play an important and ongoing oversight and assistance role. EPA realizes that States differ in their capacity to accept technical and financial responsibilities for the program. Thus, EPA must develop strategies, an oversight framework, revised technical assistance programs, and education and guidance materials that address these varying needs. This includes further study of such areas as the role of adequate O&M and other financing options as components of successful wastewater treatment programs.

Finally, EPA should conduct, over the next several years, a detailed evaluation of State SRF implementation and recommend potential programmatic improvements to adjust to new areas of consensus and enhance the movement towards ultimate State and local self-sufficiency.

ATTACHMENT I

Summary of Office of Comptroller Study of Set-Aside Programs for the POTW Funding Study

Introduction

Context and Objectives

This appendix is a summary of the Office of the Comptroller's analysis of the set-aside programs in the Construction Grants Program. The Office of the Comptroller prepared this paper to support the work of the Construction Grants Task Force in formulating and analyzing alternatives for the future design of the Construction Grants Program. This appendix provides a brief summary of the set-aside programs, identifies the major policy issues associated with these programs, and identifies and analyzes a variety of policy alternatives for modifying them.

The set-aside provisions in Title II of the Clean Water Act authorize, and in some cases mandate, the setting aside of certain percentages of Construction Grant funds to be used for financing selected types of projects or activities. For example, one set-aside authorizes the setting aside of 4% of states' allotments to help finance their costs of managing delegated responsibilities under the Construction Grants program, and for selected other purposes. There are also set-asides for "Innovative/Alternative" (I/A) projects, for funding certain types of projects in small communities and in highly dispersed areas of larger municipalities, and for funding various water quality management planning activities.

There are two major reasons why the Office of the Comptroller, in its role as a member of the Task Force, assessed the possible need for modifications to the set-aside programs. First, the set-aside provisions exert a strong influence on spending patterns for a large amount of funds made available under the Construction Grants program. Therefore, it is important to consider fully the policy objectives of the set-asides, their actual effects (e.g., are there any unintended detrimental effects of the programs), and ways of improving these programs, especially in light of their potential for helping promote the Task Force's "consensus goals" for the future of the Construction Grants Program. Second, as described in the body of this report, the Task Force is strongly considering an approach under which the federal government would help states establish revolving funds, from which the states would finance construction projects. Such a major revision may make it appropriate to revise some or all of the set-aside programs in order to help promote this objective.

Methodology

In conducting this analysis, we reviewed all pertinent written documentation, including prior studies, and relevant statutory and regulatory provisions. In addition, we conducted interviews with EPA managers and staff who are involved in managing the set-aside programs, and with selected members of the Task Force. Quantitative data used in this report was obtained from Office of Water reports and from the Agency's Financial Management System, with the assistance of the Grants Administration Division. Contractor assistance was provided by American Management Systems, Inc. (AMS).

Several interim documents were prepared as part of this study; they were circulated for comment to Task Force members and others. One of the interim documents, dated September 20, 1984, was An Overview of Construction Grants Set-Asides and Policy Issues Associated With These Programs. In addition, in late October we circulated an interim analysis of potential modifications to the set-aside programs. That document, entitled Interim Progress on the Definition and Analysis of Alternatives for the Construction Grants Set-Aside Programs, was also circulated for comment. We considered all comments received in formulating our analysis and in preparing our final paper (An Overview of the Construction Grants Set-Aside Programs and An Analysis of Potential Modifications to These Programs). That paper is summarized in this appendix.

Overview of the Set-Aside Programs

State Management Assistance Set-Aside

Under section 205(g) of the Clean Water Act, EPA is authorized (but not required) to set aside up to 4% or $400,000 (whichever is greater) of a state's Construction Grants allotment to be used directly by the state to finance the reasonable costs of administering delegated activities under the Construction Grants program or selected other EPA programs -- e.g., approved Section 402 (NPDES) and 404 (Dredge and Fill) programs. States generally use these amounts to finance the salaries of state employees who administer delegated functions under the Construction Grants program. This set-aside was created by the 1977 amendments to the Clean Water Act, to encourage delegation of the Construction Grants and other programs. Any state or territory that accepts partial or full delegation of the Construction Grants program is eligible for this set-aside. Presently, forty-nine states and Puerto Rico have met this eligibility test. (Oregon is the exception and is expected to assume partial delegation by 1986.)

While the 205(g) program appears to be a success in achieving its primary policy objective -- to encourage delegation -- there are a variety of important policy issues associated with the program. One key issue is "banking" of 205(g) funds. To date, the federal government has obligated approximately $188 million more to the states under 205(g) than the states have actually expended. In addition, approximately $45 million in funds potentially available for obligation under 205(g) have not yet been obligated. In all, there is currently approximately $234 million in unexpended 205(g) allotments. Some states have more than four years' worth of available but unexpended 205(g) funds.

Some critics of the 205(g) program argue that maintaining large amounts of "banked" 205(g) funds is poor policy, for one or more of the following reasons: (1) many of the states with large amounts of "banked" 205(g) resources have nevertheless failed to move beyond only partial delegation; and (2) there are many potential high priority uses for these funds. A different view, expressed by many, is that it is logical, and good policy, for states to "bank" at least some of their 205(g) funds, to ensure the long-run stability of the management of their delegated responsibilities, especially in light of the need to ensure an orderly phase-out of federal funding for the program should such a decision be made.

The 205(j) "Planning" Set-Aside

Under this provision, EPA is required to set aside 1% or $100,000 (whichever is greater) of a state's Construction Grants allotment to be used directly by the states for water quality management planning activities including, for example, studies to identify the most cost-effective and locally acceptable point and nonpoint measures to meet and maintain water quality standards. This program was established by the 1981 amendments to the Clean Water Act, and is viewed by some as a replacement for the 208 grant program ("Area-Wide Waste Treatment Management Planning"), which by then had been essentially phased out. To date, a wide array of planning and analysis projects have been funded under the 205(j) set-aside -- for example, studies of issues associated with nonpoint runoff, pretreatment, groundwater, integrated environmental management, and other areas.

One of the key issues is whether 205(j) should continue to be funded as a mandatory set-aside derived from Construction Grants funding. Many individuals believe that 205(j) is essentially a "budgetary gimmick" -- a way of replacing 208 funding by tying the funding to a program less subject to changes in annual appropriations. According to this argument, 205(j) represents a net drain on the Construction Grants program, because it takes away 1% of the funds that otherwise would be available for construction purposes and the resulting planning studies have little direct relevance to the Construction Grants program. A contrasting view is that the 205(j) program is invaluable, because it funds many types of high-priority studies, and the Agency as a whole derives a net benefit from the program.

The 205(h) "Rural" Set-Aside

Under this provision, EPA is required to set aside 4% of the Construction Grants allotment for any state that meets a specified definition of "rural". At present, 34 states meet this definition. In addition, the Governors of other states may request that the Administrator set aside funds for this purpose; to date, 2 states (Connecticut and Massachusetts) have requested and have received such treatment.

Funds in the 4% rural set-aside reserve can be used solely for financing the federal share of POTW construction projects that: (1) are in small communities or in highly dispersed sections of larger municipalities; and (2) employ "alternatives to conventional sewage treatment...." A state loses to the reallotment pool any rural set-aside funds that are not obligated for these allowable uses within two years of when the funds are initially made available.

One important policy issue related to this program is whether it should distinguish between rural and urban states. Some observers believe that if this set-aside is mandatory in rural states, it also should be mandatory in urban states (or that it should be optional in both), in order to help ensure that small communities in urban states are treated the same as their counterparts in rural states.

Another important policy issue associated with the rural program is whether it has an overly strong effect on how states rank projects for federal financial assistance. Each year states rank proposed projects and, in cooperation with their EPA Regional Office, decide which projects should be funded. In some cases, to ensure that none of the rural set-aside funds are lost to reallotment, some states award "bonus" points to some projects that would qualify for rural set-aside funding, to ensure that the projects move into the fundable range. In other cases, states employ "bypass" procedures to achieve the same result (i.e., they skip higher priority projects, to fund lower-priority, small community projects). Both procedures (bonus points and bypass procedures) are allowable under the state priority list system. Some individuals involved in the management of the program believe that the net effect is that too many lower-priority projects are being funded as a result, and that removing the threat of reallotment of unused Rural set-aside-funds would help alleviate this problem.

The 205(i) "Innovative/Alternative" Set-Aside

The Innovative/Alternative (I/A) set-aside program, established by the 1977 amendments to the Act, was designed to provide explicit encouragement for greater use of innovative and alternative technologies for projects funded under the Construction Grants program. Section 205(i) provides that a minimum of 4% of a state's construction grants allotment is to be made available solely for an I/A reserve; a state can elect to put up to 7.5% in this reserve. These funds are used exclusively for providing financial incentives to encourage municipalities within the state to employ innovative or alternative technologies. This incentive is in the form of a bonus. For projects that employ conventional technology, the federal share of the eligible costs is 55%. However, for municipalities that employ innovative or alternative technologies, the federal share can be 75%. The extra 20% bonus is financed by the I/A set-aside reserve. (Prior to FY 85, baseline federal funding was 75%, and the I/A bonus was 10%.) If a state elects to have less than 4% set aside for its I/A reserve within two years of the initial appropriation, the amount not set aside is lost to the reallotment pool.

One of the key features of the I/A program is that any portion of the I/A reserve that is used by a state for I/A projects exerts a strong influence on the state's other available Construction Grants funds. For each dollar of its I/A reserve that a state wants to use for an I/A bonus, the state must allocate $2.75 of its other available "regular" federal Construction Grant dollars for that project.

This additional $2.75 is sometimes referred to as the I/A "pull". For example, suppose that State Y wants to fund Municipality X's $1,000,000 I/A project, and that State Y elects to award it a 20%

bonus -- $200,000 -- out of the state's I/A reserve. To use $200,000 of its I/A reserve as a bonus for Municipality X's project, the state also has to commit $550,000 of its regular federal Construction Grant dollars (i.e., the usual 55% federal share) for that project.

Similar to the rural set-aside program, one of the key policy issues associated with the I/A program is that it may provide an overly strong incentive for the states to select I/A projects for funding, using "bonus point" and "bypass" procedures. Again, the concern is that in order to avoid losing dollars to reallotment, states are selecting some I/A projects that are relatively low priority compared to other, conventional projects that are competing for funding. In combination with the "pull" factor, this may substantially reduce the payoff (in terms of water quality objectives) of available Construction Grant resources. As discussed in more detail in the next section, among the alternatives for addressing this issue would be to make this set-aside optional or to remove the threat of reallotment of unused I/A set-aside funds.

Potential Modifications to the Set-Aside Programs

Approach for Developing Options

In developing a range of potential modifications to the set-aside programs, we primarily considered the following two factors:

- Key policy issues associated with the set-aside programs. As summarized above, we identified a range of key issues associated with the set-aside programs. In developing a set of policy options, one of our objectives was to ensure that each of these key policy issues was addressed by at least one option. For example, one of the key issues associated with the 205(g) set-aside is "banking". Since this is an important issue we have formulated a policy option that addresses it. In developing this option, we are not necessarily endorsing the view that banking is a bad practice; we are, however, endorsing the idea that a banking limit is an important option to consider. As described below, this option has both merits and potential problems.

- The Construction Grants Task Force's "Consensus Goals" for the Future Construction Grants Program. In developing a range of modifications to the set-asides, we have also attempted to develop alternatives that would directly promote the "consensus goals" identified by the Construction Grants Task Force. For example, we have developed potential modifications to the set-asides that would help achieve the Task Force's goal of promoting further delegation of the Construction Grants program to the states.

After circulating initial lists of modification options for comment, we formulated a set of seven basic options for the set-aside programs, some of which cut across several of the programs.

Options Primarily Aimed at Increasing State Flexibility

Options 1 and 2 are designed primarily to address the consensus goal of increasing the capability of states to use their available Construction Grants resources as flexibly as is practicable.

Option 1: Make the Mandatory Programs Optional

Under this option, the three mandatory set-asides (I/A, rural and planning) would be made non-mandatory. States would be able to elect to set aside any amount they choose for these set-asides, up to the ceiling amounts specified for these programs. Under the rural set-aside, states would be able to set aside anywhere from 0% to 4%; under the planning set-aside, 0% to 1%; and under the I/A set-aside, 0% to 7.5%. To further increase the flexibility of the I/A set-aside, states could elect to use funds out of the I/A reserve to fund the baseline federal share (i.e., 55%) of qualified projects. (Currently, the I/A set-aside can be use only to fund bonuses for qualified projects; as described in Chapter II, this creates the I/A "pull".)

This option would **help achieve** several Task Force consensus goals. First, making the set-asides optional would give states more **flexibility** in deciding how to utilize their Construction Grants allotments, a key Task Force consensus goal. In addition, this option would help states **maximize leveraging** of available funds. As described above, currently some states award "bonus points" and use "bypass procedures" to use set-aside dollars for relatively low-priority projects that happen to qualify for the set-aside. Under this option, because the states could decide on the appropriate levels for paricular set-asides, this problem would be reduced. In addition, because fewer dollars would be going to lower-priority projects, this option would increase the effectiveness of Construction Grants allotments in helping achieve higher **compliance** rates. Finally, this option may increase **equity**. For various reasons, some states cannot fund the types of projects that are eligible under the I/A or rural set-asides. By making these set-asides optional, this will help ensure that some states do not lose a portion of their Construction Grants allotment to reallotment for reasons beyond their control. In addition, to the extent that this option reduces the award of "bonus points" and the use of "bypass procedures", some municipalities may perceive that this increases the fairness of the overall program.

This option also may **hinder** the achievement of some Task Force goals. First, making the I/A and rural set-asides optional may reduce the amount of funds set aside by states for innovative and alternative projects. This may hinder the achievement of the goal of encouraging **affordable projects**, because innovative and alternative projects often are less costly than projects that use conventional technology. In addition, while Option 1 may increase equity in certain respects (as described above), this option also may reduce **equity** in other respects. Specifically, one of the basic reasons originally given for establishing the rural program is that it would increase equity, by giving small communities a better chance to receive their fair share of federal Construction Grants dollars. By making the rural program optional -- and because presumably some rural states would chose not to exercise the option -- some small communities might perceive this modification to lessen the equity of the Construction Grants program. Finally, there are also **other considerations** that must be weighed. Specifically, Option 1 may decrease the incentives for states to seek out high-priority I/A, rural or planning projects or activities -- especially for those states that happen not to agree with the underlying federal policy objectives of these set-asides.

Option 2: Remove Reallotment Provisions

A different approach could be used to increase state flexibility. Under this option, the I/A, rural and planning set-asides would still be mandatory. For the first two years after a state's Construction Grant allotment is first made available to the state, 1% (or $100,000) would be available solely for setting aside into a planning reserve, 4% would be available solely for setting aside into an I/A reserve, and for rural states, 4% would be available solely for setting aside into a rural reserve. However, under Option 2, after two years, if a state set aside less than the full amount called for under a particular set-aside program, the difference would not be automatically lost to the reallotment pool. Instead, the difference would automatically be made available to the state as part of its regular allotment.

Under Option 2, a state would have to try for at least two years to utilize these set-asides for their intended purposes. In contrast, under Option 1, once a state receives its Construction Grant allotment for a particular year it could immediately decide not to utilize the I/A, rural or planning set-asides. Option 2 essentially represents a compromise between Option 1 (making the set-asides totally optional) and the status quo (in which states either "use or lose" resources earmarked for the I/A, rural and planning set-asides). Option 2 is not a perfect compromise -- during the two-year period, some states probably would not try very hard to find opportunities to use the full amount of the set-asides for their intended policy purposes -- but it probably would result in a higher utilization of the set-asides than under Option 1, without removing all of their mandatory elements.

Option 2 would help **achieve** the same Task Force consensus goals as Option 1. Option 2 would increase **state flexibility**, because states would have more flexibility than under the status quo to decide how to utilize thei Construction Grants allotments. In addition, because Option 2 would remove th threat of reallotment of unused set-aside funds, states would feel les pressure (or none) to award bonus points or to use bypass procedures to fun relatively low-priority projects that happen to qualify for funding from th I/A or rural set-aside. This will result in more **leveraging of availabl funds.** In addition, because more dollars would be available for high priorit projects (at least in some states), this options would help increas **compliance.** Option 2 would also help increase **equity** for the same reasons a Option 1 (e.g., because states would have less of an incentive to use bypas procedures and to award bonus points, some municipalities may see this a increasing the fairness of the process for deciding which projects should b funded).

Option 2 also would **hinder** some Task Force consensus goals. First Option 2 might reduce incentives for states to encourage their municipalitie to utilize innovative or alternative technologies, because any resources no utilized for the I/A or rural set-asides would not be lost to reallotment This may weigh against the goal of encouraging **affordable projects.** I addition, like Option 1, under Option 2 fewer states may utilize the fu amount of the Rural set-aside, which was originally designed to increase **equity** for small communities. Finally, from an overall perspective, Option 2 may reduce the effectiveness of the set-asides in achieving their intended policy objectives, because states will have less of an incentive to utilize these set-asides fully.

Options Primarily Aimed at Increasing Leveraging of Available Funds

Options 3 and 4 are primarily aimed at minimizing the extent to which funds are set aside for low priority uses (e.g., for "banking"; for relatively low-priority planning activities).

Option 3: Needs-Based Allocation Formulas

Under this option, the state management assistance, water qualit planning and rural set-asides would be modified to incorporate needs-base allocation formulas. Currently, each of these programs authorizes or mandate the setting aside of a flat percentage of a state's Construction Grant allotment into a set-aside reserve. In some cases, there is both a fla percentage and a dollar amount, and the amount of the set-aside is set at th larger of the two. Under Option 3, the state management assistance, wate quality planning and rural set-asides would be optional, and the allowabl amount for the set-aside would be based on a state's demonstrated need, takin into account different needs among the states for the various set-asides. An amount not set aside would be made automatically available to the state for it "regular" construction purposes. Option 3 would not apply to the 205(i) 1/ set-aside because it would be difficult, if not impossible, to develop needs-based formula for this set-aside.

This option would help **achieve** several Task Force consensus goals First, this option would help **maximize leveraging of available funds.** Fo example, in some cases more resources are currently placed into the plannin and rural reserve than needed, and as a result some relatively low-priori projects are funded under this set-aside. Option 3 would help reduce t allocation of funds for these low-priority purposes. Option 3 also may promo **further delegation to the states,** because the amount of 205(g) funds availab to a state would vary according to the degree of delegation accepted by t state. As described above, under Option 3 all of the set-asides would be ma optional. For this reason, Option 3 would **increase states' flexibility** using their available Construction Grants allotments. In addition, since the would not be a pre-determined ceiling on the set-asides, states that c demonstrate a particularly large need for a particular set-aside would have t flexibility to set aside a larger amount than is currently allowed.

Option 3 also may **hinder** the achievement of some Task Force consens goals. Of particular concern, this option might create uncertainty f individual states with respect to the amount of 205(g) funds that may available in the future. This may reduce the willingness of some states consider greater **delegation.** In addition, it may be difficult to devel needs-based formulas for the various that are widely perceived as bei **equitable.** This may be especially difficult because both administrative a construction costs can vary widely among the states, therefore making the sa level of need more expensive to satisfy in different states. In additic switching to a needs-based formula for 205(g) may be perceived as "unfair" by

6-30

some states that have previously accepted selected delegated responsibilities on the assumption of continued high levels of 205(g) funding and continued capabilities to set aside (and "bank") excess 205(g) funds. Further, this option may reduce **flexibility in funding** because under a needs-based approach, some states probably would not be able to set aside as much as they want to for certain set-asides. For example, this almost certainly would be the case for some states for the 205(g) set-aside; many states that currently set aside 4% for this reserve would not be able to demonstrate a need for that amount. As another example, some states that set aside the full 1% for the water quality planning set-aside might not be successful in demonstrating a need at this level. For states in this situation, Option 3 might represent a reduction in the flexibility of the Construction Grants program compared to the status quo. Finally, because Option 3 would make the rural and planning set-asides non-mandatory, this option might reduce their effectiveness in promoting their **intended policy objectives.** For example, a state may elect to set aside less into the rural reserve than its eligible ceiling amount.

Option 4: Limit Banking Under the State Management Assistance Set-Aside

As described previously, a much larger amount of funds has been obligated to the states under 205(g) than has actually been expended by the states, and in addition a large amount of funds are potentially available but not yet obligated under 205(g). In all, more than one-quarter of a billion dollars are currently available but not yet expended -- often referred to as "banked" funds. Some states have more than four years' worth of such funds.

While some observers believe that allowing banking under 205(g) helps encourage states to accept delegation under the Construction Grants program, others have argued that banking should be limited. Option 4 would create such a limit. Specifically, under this option, which was also identified by the Office of Water, states would be limited to accumulating a maximum of three years' worth of obligated-but-not-yet-expended 205(g) funds. Any states with banked funds in excess of this amount would lose eligibility for further obligations of 205(g) funds until the balance of banked 205(g) funds fell below three years' worth, and then the state would be eligible to set aside only enough funds into its 205(g) reserve to bring the amount of the reserve up to the three year limit. There would still be a 4% ceiling on the amount that a state could set aside out of its Construction Grants allotment for an individual year.

As part of this option, EPA would develop an explicit policy of encouraging states to use 205(g) funds for their authorized non-Construction Grants purposes (e.g., water permitting and enforcement). Specifically, states would be encouraged to use for these alternative purposes any 205(g) funds in excess of three years' worth and any other 205(g) funds not needed for administering delegated Construction Grants activities.

This option would help achieve several Task Force consensus goals. First, this option would help **maximize leveraging of available funds.** Option 4 would help reduce the amount of available funds that are being obligated but not expended under the Construction Grants program. This option probably would result in a greater proportion of Construction Grants funds being expended for other high priority state management activities (e.g., NPDES permitting and enforcement) and wastewater treatment plant construction projects. Option 4 also would help promote **continued delegation to states.** Under this option, states would still have the capability of banking sufficient funds (up to three years' worth) to manage both ongoing activities and an orderly phase-out of federal funding, while making more funds available for construction or other priority needs. Of note, this option also may create an incentive for increased use of 205(g) funds for their **alternative authorized purposes** (e.g., for financing state costs of managing the NPDES program). Certain states may prefer to channel excess 205(g) funds -- i.e., funds in excess of three years' worth -- into these alternative purposes, rather than into construction.

Of particular concern, this option might **hinder** the achievement of the two Task Force consensus goals. First, this option might in fact **reduce incentives for continued delegation to states.** Senior managers in many states believe that large amounts of banked 205(g) funds provide security against uncertainties and volatility in federal Construction Grants funding (e.g., delays in appropriations). Reducing the amount of banked 205(g) funds may increase the states' perceived risk of assuming greater delegation. In addition, Option 4 might be perceived as reducing **equity.** This shift in policy may be perceived as unfair by states that have based prior decisions on the assumption that banking would continue to be allowed.

New Set-Aside Primarily Aimed at Promoting State Revolving Funds

In developing options for modifying the set-aside programs, we also considered the possibility of developing new set-asides. However, set-asides typically add complexity and federal oversight requirements, and therefore developing new set-asides generally cuts against the overall objectives for the future of the program. While taking a conservative approach, we were able to identify one new set-aside that is specifically designed to help accelerate turning over the Construction Grants program to the states. This option was developed by the Office of Water at the specific request of the Deputy Administrator.

Option 5: New Set-Aside for Encouraging the Establishment of State Revolving Funds

As described earlier, one of the major modifications being considered for the future design of the Construction Grants Program is the establishment of state revolving funds, out of which states would make loans to municipalities to fund their construction needs. The federal government would help finance these revolving funds by enabling states to use part or all of their Construction Grants allotments for startup funding for such revolving funds.

Under Option 5, EPA would develop a new set-aside program, designed to encourage states to adopt state revolving funds. Under this new set-aside, EPA would reserve a certain percentage (e.g. 10%) of the annual Construction Grants appropriation into a new "incentive" reserve, controlled by EPA. For example, if the annual Construction Grants allotment for a particular year is $2.4 billion, EPA would allocate 10% -- $240 million -- into the new incentive reserve. EPA would then make regular Construction Grants allotments to the states from the balance of the appropriation -- i.e., $2.16 billion -- using

6-32

the statutory allocation formula specified in Title II of the Clean Water Act. As a result, each state's normal allocation of Construction Grants dollars would decrease by 10%.

However, all states that agree to set up a Construction Grants revolving fund would be eligible to receive a special allotment out of the incentive reserve. For example, assume that in a typical year, State X's normal allotment of Construction Grants dollars would be $100 million. Under Option 5, State X's allotment would be only $90 million (i.e., 90% of $100 million). However, if State X agrees to set up a state revolving fund, the state would be eligible for a special allotment from the incentive reserve. For example, EPA might award State X a $15 million special allotment from the incentive reserve, thereby bringing State X's total allotment for the year to $105 million -- which is substantially larger than what its normal allotment would have been had the state not elected to set up a revolving fund. In contrast, states that elect not to set up a revolving fund would receive only 90% of their normal allotment of Construction Grants dollars.

This option would help **achieve** several Task Force consensus goals. First, this option would help promote **greater state and local self-sufficiency.** Option 5 would provide tangible incentives for states to adopt state revolving funds. Adoption of revolving funds is an important way for states to obtain greater self-sufficiency and for the federal government to shift the responsibility of the Construction Grants programs to the states and localities. Option 5 also would promote greater **flexibility in funding,** because revolving funds afford states more discretion in how to utilize Construction Grants resources.

This option may **hinder** one Task Force consensus goal -- equity. At least in the medium-term, some states that are not well-equipped to establish a revolving fund may perceive this shift in policy as unfair, because it will reduce their allotments of Construction Grants resources. This option may be perceived as being more fair if there were a phase-in period before it takes effect.

Modified Status Quo

We identified one option for modifying the status quo that is not incorporated in one of the previous options but is of potential importance.

Option 6: Modified Rural Program

Under this option, the rural set-aside would be expanded to cover appropriate conventional technology. Currently, the rural set-aside can be used only to fund projects that employ alternatives to conventional sewage treatment. However, in some cases appropriate conventional technology can meet or exceed the cost-effectiveness of innovative or alternative technology for small communities or for highly dispersed areas of larger municipalities.

This option would help achieve two Task Force consensus goals. First, this option might help increase **equity.** By making appropriate conventional technology fundable under this set-aside, Option 6 may be perceived as more fair for small communities that cannot currently obtain access to rural set-aside funds even though they would be willing to use appropriate, small-scale conventional technology. In addition, this option may help increase **compliance.** Because states would be able to fund a wider range projects under this option (i.e., appropriate conventional technology), some states may perceive less of an incentive to award bonus points or employ bypass procedures to fund otherwise lower-priority small community projects that happen to use alternative technology. This may result in states funding projects that have additional water quality improvement impacts.

Of particular importance, this option also may **hinder** the achievement of one Task Force consensus goal -- **equity.** It may be difficult to define "appropriate conventional technology" sufficiently tightly to ensure that there is consistent decision-making on eligibility under this set-aside, in fact as well as in appearance.

Option 7: Give States More Flexibility in Using the I/A Set-Aside

Currently, states can use resources in their I/A set-aside reserves only for providing 20% bonuses for innovative or alternative projects -- i.e., bonuses on top of the regular 55% baseline federal share. (States provide the 55% baseline share out of their regular Construction Grants allotments.) As described in more detail above, because the I/A reserve can be used only to provide bonuses, this creates the I/A "pull" effect: for every $1.00 a state allots to a project out of the I/A reserve towards a bonus payment, the state also must allot $2.75 to the same project out of its regular Construction Grants allotment. Under Option 7, states would be given the option to use resources in the I/A reserve to fund the baseline (55%) portion of innovative or alternative projects. States would not be required to use I/A set-aside resources for bonus payments but they would retain the option to do so.

Option 7 would help achieve several Task Force consensus goals. First, Option 7 would help increase state **flexibility**, because states would have more flexibility than under the status quo to decide how to utilize their I/A set-aside resources. In addition, because states would have the option of using these resources for baseline payments (rather than bonuses), this would reduce the I/A "pull". This would help increase **leveraging of available** funds, because some states that currently use "bonus points" and "bypass procedures" as a means of fully utilizing their I/A reserve would feel less of an incentive to do so. In other words, the decision to use $1.00 of the I/A reserve on a particular innovative or alternative project would not necessarily mean that the state has to commit another $2.75 to that project. Option 7 also may increase **equity** to the extent that some states currently do not or cannot fully use their full I/A set-aside plus the I/A pull.

Option 7 may **hinder** the achievement of some Task Force consensus goals. In particular, in some states fewer resources would end up being committed to innovative or alternative projects, to the extent that these states use I/A resources for baseline funding rather than bonus payments. This may reduce the overall utilization of innovative or alternative technologies, which may cut against the Task Force goal of encouraging **affordable projects.** In addition, if a particular state decides to no longer use its I/A resources for bonus payments -- but instead only for funding the 55% baseline federal share -- this will reduce the incentives the I/A set-aside provides for municipalities. Specifically, in those states a municipality no longer would be able to receive 75% federal funding of an innovative or alternative project, only the same 55% that any other type of project is eligible to receive. This may weaken the overall effect of the I/A set-aside to achieve the goals that Congress designed it to achieve -- in particular, to provide additional financial incentives for municipalities to use innovative or alternative technologies.

6-35

ATTACHMENT 2

SUMMARY OF SPECIAL ANALYSES ON WATER QUALITY IMPACTS PREPARED FOR THE EPA TASK FORCE ON REAUTHORIZATION OF THE MUNICIPAL WASTEWATER TREATMENT CONSTRUCTION GRANT PROGRAM

by THE OFFICE OF POLICY, PLANNING, AND EVALUATION, EPA

The Office of Policy, Planning, and Evaluation performed a number of studies for the Task Force to assess the effects of different types of municipal pollution controls on water quality. The results pointed to a need for flexibility--States should have the ability to respond to a particular water quality need with whatever controls are most appropriate for meeting that need. Sufficient variation in needs exists across regions and pollutants to warrant a financial assistance program flexible enough to provide support to all types of treatment programs.

The first study compares the relative urban loadings of total suspended solids (TSS), BOD, total phosphorus (TP), and lead (Pb) from municipal point sources (sewage treatment plants) with those from nonpoint urban sources (stormsewers, combined sewer overflows (CSOs), and unsewered areas). The results differentiate between urban areas which have CSOs and urban areas which do not have CSOs. Some results are shown for Region III and the Nation in Figure 1. For example, in Region III, 88% of the TSS loadings are from non-point urban runoff and 12% are from municipal sources. For Region III and the Nation, the majority of urban loadings of BOD and TP are from municipal sources, while most urban loadings of TSS and Pb come from non-point urban runoff. The results suggest that non-point source controls might be a better way of reducing TSS and Pb loadings than would municipal source controls, while municipal controls might be most appropriate for reducing BOD and TP loadings.

The second study compares the effect of municipal point source controls on reducing BOD, TSS, TP, and Pb water quality violations with the effect of controlling these pollutants through non-point source controls. The analysis assumes secondary treatment is in place and examines the relative reduction in water quality violations as a result of additional advanced secondary (AST), advanced wastewater (AWT) and/or CSO and urban stormwater runoff (URO) controls.

Figure 2 displays the results for an average urban area in Regions I, II, and III. The upper left hand graph represents violations in dissolved oxygen standards resulting from BOD discharges, and the proportional reduction in these violations upon adoption of further BOD controls. In the first cluster of bars on the left, the first bar represents secondary treatment with no non-point source control and no advanced treatment. The number of violations here are set equal to 1 because secondary treatment alone is the base case. The next bar to the right in this cluster represents AST with no non-point source control. This is equal to 0.4 which means there will be 40% as many violations (or a 60% reduction) of water quality standards due to BOD loading if a municipality builds AST (and no non-point source control) as compared

Figure 1

RELATIVE PERCENTAGE OF MUNICIPAL AND NON-POINT URBAN RUNOFF

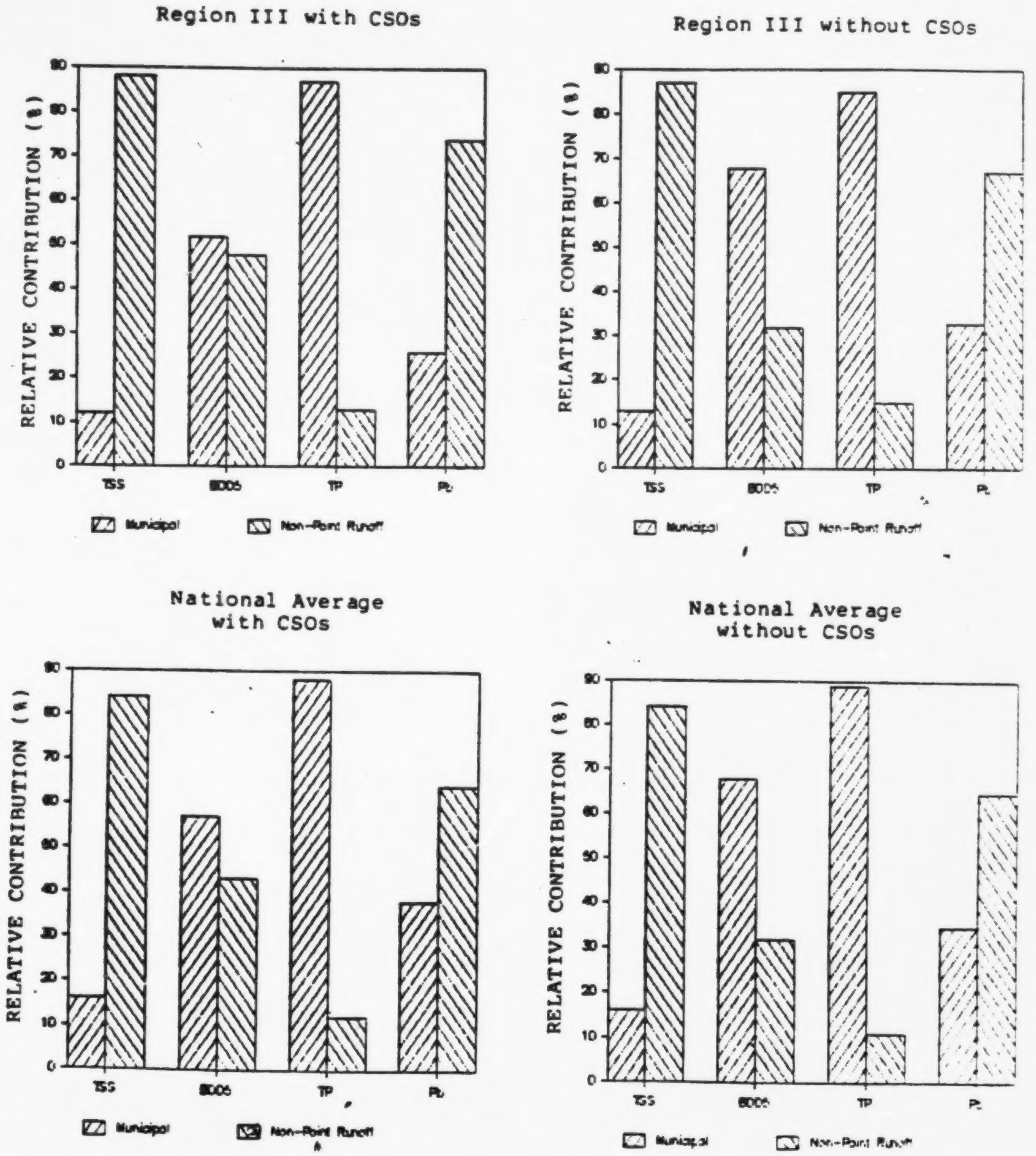
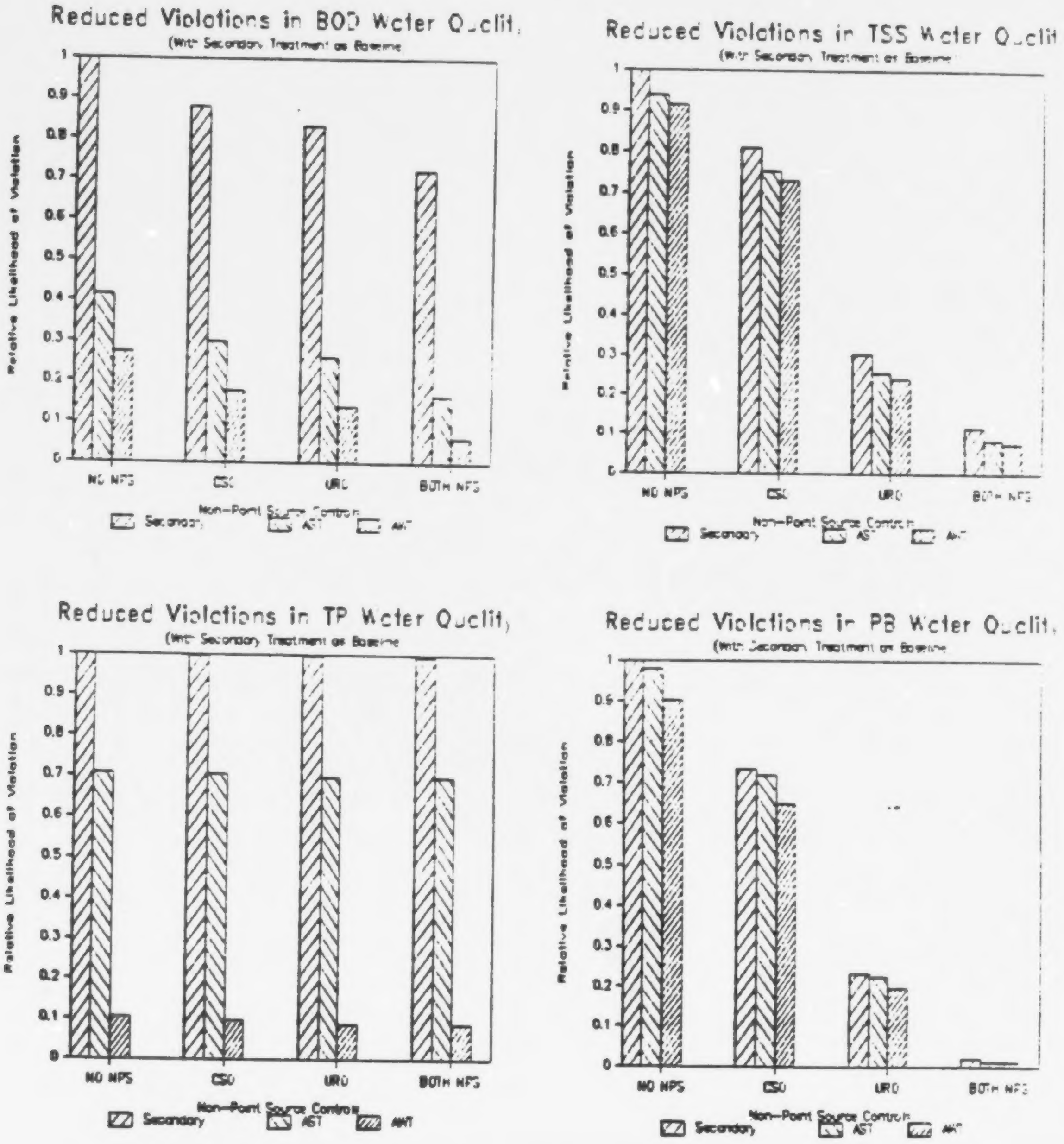


Figure 2

Indices of Relative Water Quality Improvements in Urban Areas when Moving from Secondary Treatment to Advanced Municipal Point and Non-Point Treatment[1], in Regions I, II, and III.



1. Analysis assumes only secondary treatment is in place to determine baseline water quality conditions. Percentages reflect likelihood of an equivalent number of water quality violations experienced with only secondary treatment in place and the subsequent reduced probabilities with various combinations of additional advanced point and/or non-point controls in-place.

Abbreviations - POLLUTANTS: BOD = Biological Oxygen Demand (5-day), TSS = Total Suspended Solids, TP = Total Phosphorus, Pb = Lead; WASTEWATER CONTROLS: Secondary = Secondary Treatment, AST = Advanced Secondary Treatment, AWT = Advanced Wastewater (Tertiary) Treatment; CSO = Combined Sewer Overflows, URO = Urban Runoff (Storm Sewers and Unsewered Areas), No NPS = no CSO or URO controls, Both NPS = Both CSO and URO controls.

to just having secondary treatment. The first bar of the second cluster reflects CSO and secondary with no advanced treatment. This is equal to 0.9 which means there will be a 10% reduction in BOD-related water quality violations if a community in Regions I-III adds CSO controls to a secondary treatment system. Thus, a greater reduction in BOD water quality violations takes place when AST is added (60%) to secondary than when CSO is added (10%).

The upper right hand chart, TSS water quality violations, reveals a different picture. If only AST is added to secondary treatment facilities, there is a 5% reduction (to .95) in TSS water quality violations. If only CSOs are added, TSS water quality violations are reduced by about 20% (to .80). If only urban runoff controls are added to existing secondary treatment (the first bar of the third cluster of bars) TSS water quality violation are down to 0.3, a 70% reduction. This particular chart shows that non-point source controls are generally more effective in reducing TSS water quality violations in Regions I, II, and III than are additional municipal point source controls.

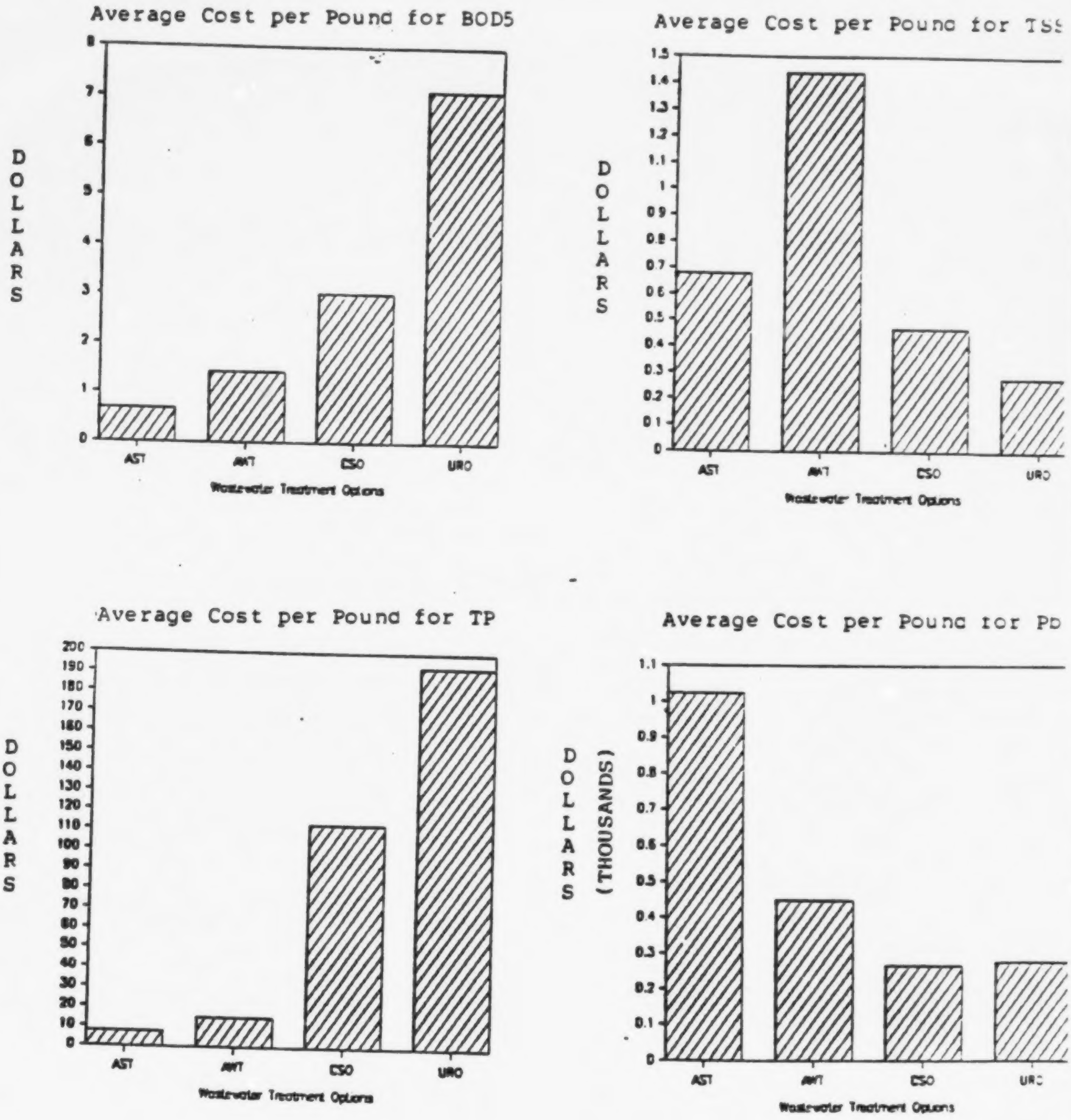
On the whole in Regions I, II, and III, urban runoff control appears more effective than municipal point source control in reducing TSS and Pb water quality problems, while BOD and TP problems are likely to be better addressed by municipal controls than by non-point controls. Analysis of other EPA Regions obtained similar results.

The study further compares the cost-effectiveness of using point-source controls and non-point source controls to reduce pollutant loadings. The study assumes secondary treatment is in place and estimates the average cost per pound of reducing pollutant loadings with control options beyond existing secondary treatment (AST, AWT, CSO or Urban Runoff-URO). A comparison can be made between each control's estimated average cost per pound of reduced pollutant loadings to determine which control option offers the most cost-effective solution for each pollutant.

The results are displayed in Figure 3. The graph in the upper right gives the average cost per pound removed for TSS using four control options. The first bar, labelled AST, is equal to $0.68, which means that moving from secondary treatment to AST will remove additional TSS at an average cost of $0.68 per pound. The additional cost of moving from secondary treatment to AWT, as shown with the second bar, would cost about $1.44 per additional pound of TSS removed. The third and fourth bars indicates that moving from secondary treatment to CSO and URO controls costs $0.50 per additional pound and $.30 per additional pound, respectively. The results indicate it would be more cost-effective to first consider non-point source controls rather than AST or AWT to reduce TSS loadings.

Figure 3

Average Cost per Pound of Reduced Pollutant Loadings when Moving from Secondary Treatment to Advanced Municipal Point and Non-Point Treatment in Regions I, II, and III



The graph in the upper left is the average cost per additional pound of removing BOD. The average cost is $0.68 per pound for AST and $1.44 per pound for AWT. The average cost for CSO control is $3.03 per pound and $7.12 per pound for URO. Therefore, it would generally be more cost-effective to first use point source controls to handle BOD before considering non-point source controls. The remaining two graphs suggest that point source controls are more cost-effective for reducing TP while non-point source controls are more cost-effective for reducing Pb.

All three studies--on loadings, on water quality violations, and on cost-effectiveness--yield the same result with respect to the relative effect of municipal point and non-point controls on four major pollutants. TSS and Pb are most effectively addressed by non-point controls; BOD and TP by point source controls. This suggests the value in allowing communities broad flexibility in addressing their water quality problems. For some types of water quality problems a community would be better off with additional municipal controls, while in other cases additional non-point source controls would yield greater results.

Further analysis considered only projects specifically providing secondary or advanced treatment of municipal sewage. A statistically random sample of eligible projects in categories I, IIA, and IIB taken from the 1982 Needs Survey was analyzed to determine the extent to which these projects would contribute to improving identified water quality problems. The sample results (shown in Table 1) suggest that about half of these projects are located on water bodies currently meeting designated use standards (e.g., recreational, drinking water, fishery, agricultural, etc.).

When the projects are weighted by their cost rather than simply counted, it appears that about 30% of the dollar needs for categories I and II are for projects affecting water bodies currently meeting designated use standards. It is clear that smaller, less costly projects are more frequently on water bodies meeting standards than are the larger, more expensive projects.

These results suggest that continuing attention should be given in the future to assisting those wastewater treatment projects most likely to be critical in meeting water quality standards. State priority lists generally assure this result satisfactorily now. In the future, as projects on streams not meeting standards are funded, an increasing fraction of the unfunded treatment needs in categories I and II may be on water bodies already meeting standards. There are very good reasons for funding many such projects--the secondary treatment requirement and a desire to maintain high-quality waters, for example. From the limited perspective of attaining water quality standards, though, states may occasionally wish to fund other sorts of projects ahead of some

TABLE 1

RECEIVING WATER STATUS FOR SAMPLE OF FACILITIES FROM 1982 NEEDS SURVEY
(Weighted by Number of Facilities and Costs)[1]

Classification	Weighted by Number of Facilities			Weighted by Cost of Facilities		
	Number in Population	% in Sample on Waters Meeting Standards	Extrapolated to Population	Facilities ($ millions)	% in Sample on Waters Meeting Standards	Extrapolated to Population ($ millions)
By Cost Magnitude[2]						
Large	644	22	140	15,170	21	3,210
Medium	5,041	43	2,170	6,980	44	3,070
Small	10,113	58	5,880	1,880	57	1,070
By Treatment Type[3]						
Secondary	11,645	53	6,170	14,870	33	4,910
Advanced	4,153	49	2,040	9,260	27	2,500
All Treatment Plants.	15,798	52	8,200	24,130	31	7,500

Source: National Overview of Construction Grants Program, by GKY & Associates, Inc. for Office of Policy Analysis, U.S.E.P.A., (Washington, D.C.: September, 1984).

[1] Percentages are derived by weighting the sample distribution to reflect the number of facilities, and cost of facilities, each observation represents for the population.

[2] Cost magnitudes are defined as folows: Large = > $5 million; Medium = $.05–$5 million; and Small = < $0.5 million.

[3] Definitions of treatment type correspond with 1982 Needs Survey definitions: Secondary = Category I and

municipal treatment needs. The financial assistance program should be flexible ehough to accomodate this. Moving the construction grant program towards greater flexibility in the funding of other than just core projects will give localities the opportunity to select the wastewater treatment program that best meets their needs and the national water quality goals of the Clean Water Act.

ATTACHMENT 3

EVALUATION OF PRIVATE FINANCING FOR MUNICIPAL WASTEWATER TREATMENT FACILITIES

(EPA Summary of Report Prepared by Peat, Marwick, Mitchell & Co.)

There is an opportunity for private financing to provide a share of the funding of municipal wastewater treatment facilities needed to the year 2000. (This concept has come to be known as privatization).

The Deficit Reduction Act of 1984 largely continued tax benefits for service contract agreements between municipalities and private entities for private financing, building, owning and operating municipal wastewater treatment facilities. Municipalities would pay a fee for the service.

The tax benefits that are available to the private entity in service contracts agreements can include:

1. Depreciation	
o Equipment and Other Personal Property	5 years accelerated depreciation (ACRS)
o Real Property	18 years accelerated depreciation (ACRS)
2. Investment Tax Credits	10% allowed
3. Industrial Development Bonds (IDBs)	Quantity limited to the greater of $150 per State resident or $200 million per State

A service contract agreement can result in a municipality obtaining wastewater treatment facilities at a cost that is equal to, or less than that resulting from a 55% Federal grant, depending on whether or not tax exempt industrial development bonds are used in the financing.

Privatization can be utilized to fund and operate new treatment facilities. EPA's 1984 Needs Survey database indicates that a total of 8895 new treatment systems will be needed by the year 2000. Of these, 7402 will be for communities below 3500 in population. (A viable financial package for privatization funding is suggested by some experts to be around $5,000,000 or more, unless several towns pool together in the same financial package).

Privatization also has a potential market in expanding or improving facilities that have not been financed with Federal funds. In these cases it may be possible, under State and local laws, to transfer title of the existing facilities to private ownership for expansion, improvement, and operation and maintenance.

Where Federal funds have been invested in an existing facility, OMB has issued a written opinion (following Circular A-102) that the continuing Federal interest in the purpose of the facility would prevent any encumbrance or transfer of the municipal title. However, distinct new portions of the facility may be privately financed, owned and operated, such as a new sludge handling facility.

Peat, Marwick and Mitchell's comparison of municipality costs and potential lost revenues to the Federal Treasury for several alternative methods of financing, including privatization, are as follows:

Financing Options	Cost to Municipality	Potential Lost Revenues to U.S. Treasury
	($10,000,000 Facility)	
1. 100% Funding by Municipality	$10,000,000	$1,613,000
2. 55% Grant and Public Financing	7,635,000	3,597,000
3. Private Municipal Lease	14,492,000	+1,970,000
4. Private Service Contract w/o IDBs	7,761,000	3,268,000
5. Private Service Contract with IDBs	6,705,000	4,780,000

(These data may vary depending on different assumptions).

The assumptions and the financing model from which these data are derived are described on the next three pages which are verbatim from the Peat, Marwick and Mitchell Report.

ASSUMED FACILITY COSTS AND PROPERTY CLASSES (000's)

PROPERTY	CAPITAL COSTS	USEFUL LIFE	ACRS PROPERTY	OTHER DEP. SCHEDULES
BUILDING	1500	50	10 YEAR	40-YEAR (STRAIGHT LINE)
LAND	500		NA	
EQUIPMENT	4000	15	5 YEAR	20 YEAR (125% LEASE)
STRUCTURES	4000	30	5 YEAR	20 YEAR (125% LEASE)
*TOTAL PROJECT COST	10,000			

CASE SCENARIO: FINANCING ASSUMPTIONS FOR OPTIONS

-PRIVATE FINANCING-

INVESTOR TAX BRACKET = 46.00%
INVESTOR EQUITY = 20.0%
REQUIRED ROI(AFT.TAX) = 20.00%
INTEREST RATE(IDB) = 9.73%
MATURITY = 20 YEARS
ITC ELIGIBLE COST = 8000
CORPORATE RATE = 12.00%

RATE USED IN MODEL = 12.0%

-PUBLIC FINANCING-

FEDERAL MONEY COST = 9.71%
TAX-EXEMPT RATE = 9.73%
MATURITY PERIOD = 20 YEARS

-PROJECT COSTS- (000's)

EPA ELIGIBLE = 43.00% = 4300
EPA INELIGIBLE = 57.0% = 5700
LOCAL FINANCING = 7635
(WITH 55% GRANT)
PURCHASE PRICE (YR 10) = 75.0% 7500
PURCHASE PRICE (YR 20) = 50.0% 5000
PLANT O&M COST = 750 PER YEAR
O&M INFLATION = 0.08 PER YEAR

Peat, Marwick, Mitchell & Company
Description of Financing Model and Options

100% Public Financing. With this option, the municipality finances, owns, and operates the entire treatment and collection facility. The facility is financed with tax-exempt municipal bonds. The following cost calculations are made:

Cost to Treasury = Present value cost of tax-exempt borrowing (discussed subsequently in this section)

Cost to Municipality = Present value of annual debt service payments by municipality

55% Grant and Local Financing. The municipality owns and operates the facility and finances it using an EPA grant for 55% of the eligible costs with the remainder financed locally with tax exempt municipal bonds. Costs are calculated as follows:

Cost to Treasury = (55% x grant eligible cost) + present value cost of tax exempt borrowing

Cost to Municipality = Present value of the annual debt service payments for the local share of the project costs

Municipal Lease Financing. In this option, the private entity finances and constructs the facility and leases it back to the municipality. The facility is operated by the municipality. Under the new tax laws, accelerated cost recovery is severely limited for municipal leases, particularly for tangible property (versus real property), thus hindering the economic attractiveness of this option. Costs are calculated as follows:

Cost to Treasury = Present value of lost (or gained) taxation + present value cost of tax-exempt (IDB) financing (only if available)

Cost to Municipality = Present value of annual lease payments over the financing term

Service Contract. A full service contract arrangement assumes that the private entity finances, contracts, owns, and operates the facility. The option allows ACRS depreciation and investment tax credits (ITC) for eligible property. The model includes purchase options at years 10 and 20 in which the facility is sold to the municipality which finances it with tax-exempt bonds. These options are evaluated separately from the no-purchase option. The costs are calculated as follows:

Cost to Treasury = Present value of lost (or gained) taxation + present value cost of IDB financing (only if available)

Cost to Municipality = Present value of annual service charges over financing term

Cost of Lost Taxation

In the private financing options, the tax benefits allowed represent a cost to the U.S. Treasury (relative to public financing with no tax benefits). Tax benefits can also be passed on to the municipality in terms of lower service charges. The cost to the Treasury is calculated as:

Cost of Lost Taxation = (Income before taxes x marginal tax bracket) + investment tax credit (if eligible)

The present value is calculated for the stream of projected tax losses over the financing term. This approach assumes that the private company or investor will have sufficient income to use all tax benefits in the year incurred. Carryback and carryfoward of taxes for use against taxable income in other years is not considered.

Cost of Tax-Exempt Financing

The cost of tax-exempt financing is calculated for financing with municipal bonds and IDBs. The approach assumes that the project is financed at tax-exempt interest rates where it would otherwise be financed at commercial taxable rates. The method used in estimation is based on that used by the U.S. Treasury.[1] The calculation equation follows:

Cost to Treasury = $t_r * i_t * P$

where: $t_r = (i_t - i_e)/i_t$

and

t_r = marginal tax rate of investors switching from taxable to tax-exempt bonds
i_t = taxable interest rate of bonds
i_e = tax-exempt interest rate of bonds
P = principal of loans outstanding

This cost is calculated in the model annually over the financing term and on a present value basis.

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[1] Modelling Revenue and Allocation Effects of the Use of Tax-Exempt Bonds for Private Purposes, Department of Treasury, OTA Paper 44, December 1980.